ANALYSIS AND COMPARISON OF PART ONE CRIMES IN THE OKLAHOMA CITY AND WEED & SEED AREAS

1996 - 2000

By

Gregory R. Hakman

Bachelor of Science

Oklahoma State University

Stillwater, Oklahoma

2002

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
May, 2002

ANALYSIS AND COMPARISON OF PART ONE

CRIMES IN THE OKLAHOMA CITY AND

WEED & SEED AREAS

1996 - 2000

Thesis Approved:

Thesis Advisor

Dean of the Graduate College

ACKNOWLEDGMENTS

I wish to express my sincere thanks to my advisor, Dr. G. Allen Finchum for his constructive guidance, patience, endless encouragement, and friendship that I will not forget. My appreciation extends to my other committee members Dr. Jon Comer and Dr. Reuel Hanks. Thank you for your in-depth critiques and helpful advice throughout this project. I would also like to extend my thanks to those who provided suggestions and encouragement along the way during this project, especially Dr. David Wright of the Oklahoma Criminal Justice Resource Center. Thank you for your helpful advice and for providing me with any information I needed for this project.

I would also like to give my most sincere and special appreciation to my wife, Melissa, for her invaluable suggestions to my research, her strong and faithful encouragement at the many times of difficulty, her love and understanding throughout this whole process. Without her this would never have happened. Thank you from the bottom of my heart. Thanks also go to my parents for their support and encouragement throughout my education.

Finally, I would like to thank the Department of Geography and its staff for all of their help and advice during the past three years.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

Crime is a serious and common activity in today's society. Drug-related crimes, gang violence, and violent crimes, including murder, rape, robbery, and aggravated assault, have taken center stage in many of our nation's neighborhoods. Rates of crime range from one murder every 38 hours to one non-violent crime every four minutes in the United States. Violent crimes occur daily at a rate of one every 31 minutes nationwide (OCJRC, 2000). Law enforcement agencies have attempted to combat these crimes by using every legal means possible. A common means employed by these agencies have come in the form of prevention programs. One such program is Operation Weed and Seed. This program was implemented by the Department of Justice in the early 1990's as a strategy to control violent crime, drug-related crimes, and gang violence in targeted areas and also to provide a safe environment for residents to live, work, and raise their families. Studies regarding the effectiveness of the Weed and Seed found an overall drop in crime, a drop in drug activity, a decrease in gang violence, and an increase in the feeling of safety in the communities in which it was implemented. Due to these positive results, Operation Weed and Seed has expanded from the original three sites, located in Kansas City, Missouri, Trenton, New Jersey, and Omaha, Nebraska, to now more than 200 sites (Dunworth, et al, 1999) with one of those in Oklahoma City, Oklahoma.

The Oklahoma City Weed and Seed is located in the south central section of the metropolitan area (Figure 1). It is approximately three miles from the downtown region. Few in-depth studies have been conducted on the Oklahoma City Weed and Seed. Most of the studies conducted thus far have been in the form of surveys to gather information from residents regarding their feelings of safety and needs. In order to continue funding, the Oklahoma City Weed and Seed has assembled and evaluated crime statistics since the funding year of 1996 through the present. That evaluation reported a decrease in crime levels from 1996 to 2000. It appears that the Oklahoma City Weed and Seed area is experiencing a decreasing crime rate.

Problem Statement

Is the Oklahoma City Weed and Seed area experiencing a higher reduction in Part One crimes as compared to the remainder of the Oklahoma City metropolitan area? Part One crimes are classified as being murder, rape, robbery, felonious assault, burglary, larceny, auto theft, and arson.

Current Investigation

The purpose of this study is to determine whether or not the Oklahoma City Weed and Seed area is experiencing reduced Part One crime at a greater rate than the rate change or decrease of Part One crime in the entire city during a period including the beginning of the program through Fiscal Year 2000. In addition, this study examined per capita

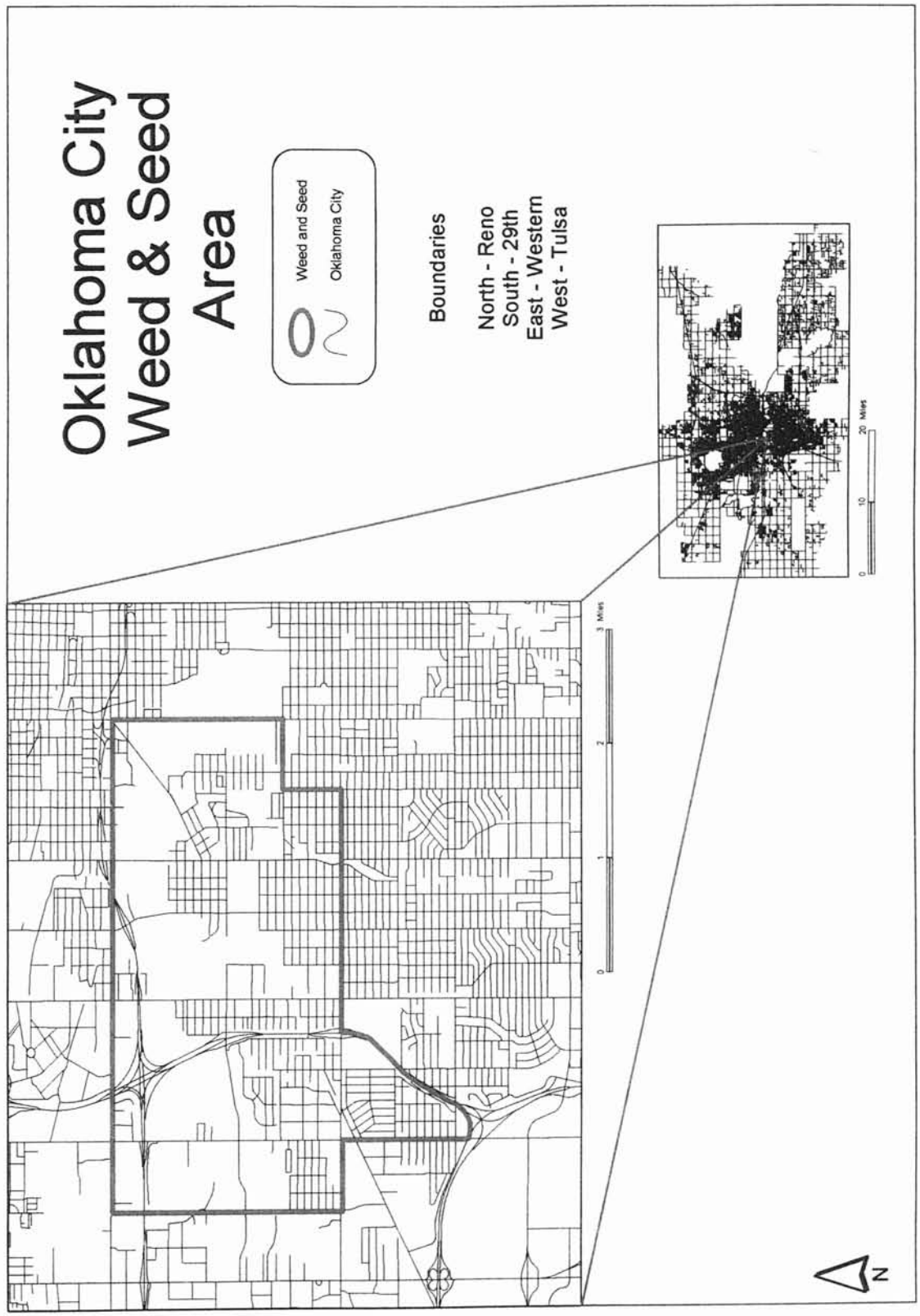

Figure 1. Location of the Oklahoma City Weed & Seed.

rime rates in the Oklahoma City Weed and Seed area and in the general Oklahoma City Metropolitan area. This study determined if the block groups located in the Weed and Seed area had a significant difference in the total percentage of change in Part One crime rates versus the remainder of the Oklahoma City area, which was divided into a two-mile radius zone and an outer zone comprised of the remaining block groups of Oklahoma City. Finally, demographic variables were analyzed in relationship to Part One crimes. There are numerous types of crime; however, this study concentrated its efforts on Part One crimes that occurred from 1996 to 2000.

Implications

Results of this study not only document the effectiveness of crime reduction in the Oklahoma City Weed and Seed area as compared to the general metropolitan area, but also provide information regarding sociodemographic variables associated with crime. This information can be used to determine appropriate sites for future implementation of additional Oklahoma City Weed and Seed areas or similar policing efforts.

Limitations

The limitations in this study involved the data. Although the Weed and Seed program has a primary goal to reduce drug-related crimes, data on those types of crimes were not readily available for use in this study. Part One crimes do not include drug-related offenses. Another limitation was the use of 1990 US Census data. Although the 2000 Census data was complete, it was not accessible at the time data were assembled for

this study. Another limitation is the small amount of data to be studied due to the program's short history thus far.

Research Questions

Research Question I

Does the Weed and Seed area have a higher rate of reduction of Part One crimes Per 1000 People and total number of crimes than the rest of Oklahoma City, as divided between the Weed & Seed block groups, a two-mile buffer zone, and an outer area consisting of all OKC block groups excluding the Weed and Seed block groups?

Hypotheses: It is predicted that Part One crimes in the Oklahoma City Weed and Seed area will have a greater decrease than the remainder of the Oklahoma City metropolitan area. This comparison is for total crime reduction within the Weed and Seed and the remainder of Oklahoma City as a whole.

It is predicted that the Weed and Seed block groups will decrease at a greater rate in the total percentage of change in Part One crimes than the two-mile zone block groups. Further explanation of this is made in the methodology.

It is predicted that the Weed and Seed block groups will have a greater reduction in total percentage of change in Part One crime than the outer zone of block groups. Further explanation of this is made in the methodology.

It is predicted that the two-mile zone block groups will have a greater reduction in total percentage of change in Part One crime compared to the outer zone. This is explained further in the methodology chapter.

Research Question II

What sociodemographic characteristics are most closely associated with Part One crimes in the Weed and Seed, as well as the Oklahoma City metropolitan area?

Hypotheses: It is hypothesized that lower Per Capita income will be associated with higher occurrences of Part One crimes.

It is hypothesized that younger block groups will experience a larger decrease in the total percentage of change in Part One crime.

It is hypothesized that the higher percentage of population below poverty in a block group, the greater the total percentage decrease in Part One crimes.

Materials

US Census Data

The 1990 census data (US Census Bureau, 1990) included sociodemographic variables at the block group level. These variables were compared and analyzed along with crime rates. Variables utilized included: per capita income, age cohorts, ethnicity, and the ownership status of housing units in each block group (rented or owned). These were utilized in order to determine which variables are most closely associated with crime in the Oklahoma City Weed and Seed area.

Part One Crime Data

This database is provided by the Oklahoma City Police Department and encompasses the years from 1996 through 2000. The crime data that are provided entails Part I crimes in the Oklahoma City area. Specific Part One crimes include: murder, rape, robbery, assault, burglary, larceny, auto theft, and arson. These data were geocoded to show where these crimes are occurred in the various block groups.

ArcView GIS 3.2

The GIS software package utilized in this study was ArcView GIS 3.2. Environmental Systems Research Institute, Inc. (ESRI) developed this program. This program was used to geocode Part One crimes to their respective addresses and map crime variations.

Analyses

In order to test the various proposed hypotheses, numerous statistical analyses will be utilized. Each research question is given, followed by a description of the statistical analysis, which is used to test the hypotheses for each research question.

CHAPTER II

LITERATURE REVIEW

Crime

Crime has long been an issue in America. Violent crime rates were at an all time high in 1991 with a rate of 758.1 crimes per 100,000 people (FBI, 1999). The 1991 total crime index was a staggering 14,872,900 crimes committed in America. However, this rate has changed over the past several years. As evidenced by the FBI's Uniform Crime Report (1998), violent crime rates have steadily dropped from the 758.1 per 100,000 people in 1991 to 566.4 violent crimes per 100,000 in 1998. The total crime index fell accordingly from 14,872,900 in 1991 to 12,475,600 in 1998 nationwide. It appears that general crime rates are declining nationwide. Most believe that these crimes occur in predominantly inner city, low-income areas. Studies have confirmed this belief by showing there is a positive relationship between the degree of suburbanization of a metropolitan area and inner city crime rates (Gibbs and Erickson, 1976; Skogan, 1977; Farley and Hansel, 1981; Stafford and Gibbs, 1980; Farley, 1987). These studies have shown that the farther from the inner city and the more suburbanized an area gets, the less crime there is, nonviolent and violent. These same studies have also shown that when crime does occur, the suburbanites are, more often than not, the victims, and the inner city dwellers are usually the ones committing the crimes in the suburban areas.

Poverty has also been linked as a contributing factor to crime. It is argued that poverty is linked directly to suburbanization and inner city crime (Gibbs and Erickson, 1976; Hughes and Carter, 1981; Cohen, et al, 1981; Allen, 1996). The higher the poverty levels, the more likely crimes will occur. When people are faced with economic hardship, they often turn to whatever means possible to survive. Often the survival tool is crime. As far as unemployment is concerned, Devine, et al, (1996) argue that unemployed people have a greater chance of turning to crime as a means of survival.

Poverty is not the only factor that contributes to criminal behavior. As shown by Farrington (1986), youth from these inner city homes are often associated with crime. This can be attributed to the loss of parental control, lack of responsibilities, and peer pressure. In addition, these youths are also often recruited into street gangs, which serve as the only stability in their lives. Albeit a negative form of stability, many youth in the inner cities often turn to gangs, which in turn increases their involvement in crime.

Crime and Oklahoma

Some studies have been conducted specifically regarding crime in Oklahoma. Initial studies conducted in the 1970s compared the level of crime in rural vs. metro areas in Oklahoma. The unpublished report Oklahoma Crime: A Geographic Perspective (1977) discusses crime patterns in Oklahoma in the late 70's. In this report, Harries documents differences in crime rates between metro areas and rural areas between 1968 and 1975 by utilizing statistical analyses represented by plots. He found that the highest rates of crime occur in both the Oklahoma City and Tulsa metropolitan areas. Harries also documented trends of violent crimes in Oklahoma City and Tulsa. Harries

concluded that Oklahoma City had a higher rate of criminal activity than Tulsa in all crime categories. Overall, Harries found that crime is greater in metropolitan areas in Oklahoma, especially in Oklahoma City, which had the highest occurrence of violent crimes in the state.

The Oklahoma Uniform Crime Index (1999) produced by the Oklahoma State Bureau of Investigation reports the types of crimes committed in Oklahoma at the county level. As noted by Harries, Oklahoma City has one of the highest rates of crime in the state. Oklahoma City is predominantly located in Oklahoma County. Table 1 displays the Part One crime totals from 1996 – 2000 for the Oklahoma City metropolitan area. The crime rate per 1,000 people decreased dramatically during these reporting years. The 1996 rate was 101.12 crimes per 1,000 people. This rate fell to 75.98 crimes per 1,000 people in 2000. Overall, these Oklahoma Uniform Crime Indexes show that Oklahoma City has experienced an overall decrease in crime from 1996 to 2000.

Violence In Oklahoma: A Case for Prevention 2000 (Oklahoma Criminal Justice Resource Center, 2000) discussed trends of violence and crime in Oklahoma. Oklahoma ranked as one of the top ten states in categories such as burglary, suicide, and female homicide rate resulting from domestic violence (Oklahoma Criminal Justice Resource Center, 2000). Statistics showed that in 1998, around 300 Oklahomans died as a result of homicide. Additionally, law enforcement responded to over 21,000 domestic abuse calls. One rape was reported to police every six hours in Oklahoma, while a robbery is reported every three hours (Oklahoma Criminal Justice Resource Center, 2000). Also indicated by this study, Oklahoma's crime rate ranked 17th in the United States. As reported by the Oklahoma Criminal Justice Resource Center (2000), Oklahoma County ranked below

the state average of domestic violence per 100,000 people. The rate for Oklahoma County in 1999 was 519 cases per 100,000 people, as compared to the state's average of 974.2 cases per 100,000 people. However, this was not the case for other crimes committed in Oklahoma County. This report indicated that there were 8.4 murders per 100,000 people in Oklahoma County in 1999 as compared to the state rate of 6.2 homicides per 100,000 people. In addition, Oklahoma County ranked second in the state for rapes committed per 100,000 people at 150.4 offenses. The state's rape per 100,000 people was 88.3 rapes. Thus, it can be confidently stated that Oklahoma County is an area of higher crime and deserving of attention.

Prevention of Crime

Due to the high levels of crime, efforts have been made to decrease and prevent crime through the use of prevention programs. Prevention programs can be classified as primary, secondary, or tertiary. Primary prevention programs focus on preventing violence from occurring. This is done by focusing on either the entire population or a select portion of the population (OCJRC, 2000). Examples of primary prevention programs are Drug Abuse Resistance Education (D.A.R.E.) and Project Exile. D.A.R.E. is a prevention program aimed at drug prevention among youth and in schools, whereas Project Exile is aimed towards removing firearms from the streets. Secondary prevention programs, on the other hand, focus on intervening into the violence early in the stages by minimizing the damage that has already occurred and preventing future damage from occurring (OCJRC, 2000). An example of this type of program is training medical personnel to specialize in areas such as abuse. Tertiary prevention programs intervene at

the point after substantial damage has occurred. An example of this type is the Department of Human Services removing a child from an unsafe home after repeated abuse incidents.

The Weed and Seed Program

As stated above, numerous prevention programs have been developed. One primary prevention program currently being implemented across the United States is Operation Weed and Seed. It represents an ambitious Federal, State, and local effort to improve the quality of life in targeted high crime areas in America's cities (Dunworth, et al, 1999). This program, which was first introduced in 1991, was designed by combining two main components, the "weed" and the "seed." The primary purpose behind "weeding" includes efforts to identify, arrest, and prosecute violent crime offenders, drug crime offenders, and gang members (Department of Justice, 1992). The concept of "weeding out the bad" is therefore based on removing these criminals from the target area and neighborhoods. The primary purpose behind the second component, "seeding", includes improving the quality of life for residents through Human Service programs. These programs include after school, weekend, and summer programs for youth, adult literacy classes, and parental counseling. There are also efforts employed to revitalize target neighborhoods and prevent or deter future crime. The "Seeding" portion of the program facilitates community pride and awareness.

The purpose of the Weed and Seed is to demonstrate an innovative, integrated approach to law enforcement and community revitalization for preventing and controlling crime (Department of Justice, 1991). In order to address this purpose, the Weed and Seed operates by following two major goals. The first goal is to control

violent crimes, drug trafficking, and gang activities in selected target neighborhoods. The second goal is to provide a safe environment for residents to live, work, play, and raise their families (Dunworth, et al, 1999). This innovative program works to achieve these goals by setting up community-focused human service programs and neighborhood focused improvement programs. These two programs are then strategically linked with geographically targeted law enforcement efforts that are provided by the police and prosecutors. Thus, one can consider Operation Weed and Seed as being a cooperative "coordination strategy" between the police and the community.

Objectives of the Weed and Seed Program

As previously stated. Weed and Seed's primary purpose is to prevent or control crime through the use of a collaborative, integrative approach involving law enforcement agencies, human services agencies, and the community. In order to address this purpose, each Weed and Seed site is guided by three major objectives: interagency collaboration, integration of multiple resources, and community mobilization (Department of Justice, 1991). Each objective will be briefly described below.

According to the Department of Justice (1991), the Weed and Seed must first develop a comprehensive, multi-agency strategy to control and prevent violent crime, drug trafficking, and drug-related crime in the target, high crime neighborhoods in order to obtain interagency collaboration. Coordination between police involved with surveillance and between police who control neighborhood watches is a common example of interagency collaboration.

Second, the Weed and Seed must obtain integration of multiple resources. In order to meet this objective, the Weed and Seed attempts to coordinate and integrate existing resources with resources provided by the criminal justice system and human services agencies. By coordinating these various resources, the Weed and Seed is able to maximize their impact on reducing and preventing violent crime, drug trafficking, and drug-related crime. This objective also maximizes the opportunity for good results by implementing the power of the social services.

The final objective involves establishing a relationship between residents living in the targeted sites and law enforcement agencies (Department of Justice, 1991). Residents assist the police with identifying and removing violent offenders and drug traffickers from the neighborhoods. Residents also assist other human service agencies in identifying and responding to the service needs of the target area. The Department of Justice (1992) reported that there is a need to mobilize residents to be active in their participation in the services that are delivered. Thus, the Weed and Seed has three major objectives, which it strives to reach by utilizing collaboration and cooperation between law enforcement officials and residents in the targeted area.

Criteria for Neighborhood Selection

It is simply not possible for every city to have a Weed and Seed program to aid in the fight against crime due to funding limitations. In order to be selected as a Weed and Seed site, a city and neighborhood must meet certain proposed criteria. The criteria can be classified into two main categories: signs of neighborhood deterioration and signs of neighborhood potential. Each of these criteria will be discussed briefly.

Signs of Neighborhood Deterioration: There are numerous signs of neighborhood deterioration as proposed by the Department of Justice's Weed and Seed Implementation Manual (1991). One sign of neighborhood deterioration is a high level of crime. Neighborhoods are classified by the number of crime incidents and by the rate of calls for police service in situations that indicate a breakdown in order such as shots fired, robberies, and domestic violence. A second sign of deterioration is a high incidence of drug-related crime. This is evidenced by a large number of street level markets and crack houses. Third, high levels of gang-related crime is also a criterion and is indicated by large amounts of gang graffiti, displays of gang colors, and drive-by shootings. A high level of unemployment is the fourth criterion, which falls under this category. High levels of unemployment are directly related to economic hardship, which in turn increases the likelihood individuals will turn to crime to meet their economic needs. Fifth, a significant school drop out rate will also classify a city as in need. An increased school drop out rate can possibly increase the chances that the youth will be involved in gang activity and antisocial activities. The sixth criterion for demonstration of deterioration is a high rate of public assistance. The final criterion is a high number of persons under correctional supervision. This criterion was included because these individuals are more likely than others to commit crime. The above criteria are utilized in order to classify a community or neighborhood as deteriorating.

Signs of Neighborhood Potential: According to the Weed and Seed Implementation Manual (1991), in addition to neighborhood deterioration, a neighborhood must also meet criteria for neighborhood potential. There must be a sign that the neighborhood has the potential to be revitalized economically. This is shown in

the form of businesses that can bring money into the neighborhood and increase their economic development and employment base. The second criterion used to demonstrate potential is the presence of community organizations. The residents and organizations have to demonstrate a willingness to work directly with the Weed and Seed. Without this help, the Weed and Seed will not be effective. The final criterion for selection is an identifiable area. In other words, the neighborhood must be distinguishable from the other neighborhoods so that a target area can be identified. In conclusion, there are both negative and positive outcomes that the Weed and Seed utilize to classify a neighborhood as being part of the organization.

Implementation of the Weed and Seed Program

In order to establish a new Weed and Seed site, there are six steps in the implementation process. The first step is the organization of a Weed and Seed steering committee. This usually includes a core group of community officials and the local U.S. Attorney (Department of Justice, 1992). The steering committee has numerous tasks ranging from setting up meeting times to developing the annual budget. Next, this committee selects the targeted neighborhood or area based on the criteria given above. Step Three involves a needs assessment of the target area chosen. This means that the area's conditions will be studied in greater detail in order to delineate specific problems and needs of the area. Fourth, the committee selects existing resources that can be utilized. In addition, the committee also develops new resources that can be used. Sources can range from local police departments to Boys and Girls Clubs to the YMCA. Private businesses and organizations can also be involved.

Step Five entails the development of implementation activities. The communities and areas involved set goals and objectives. Examples of goals are a reduction in the occurrence of violent crime, elimination of open-air drug trafficking, and improvement of the economic viability of the target area. The final step of the implementation includes the development of an implementation schedule. Timelines for community programs are set, in addition to arranging tasks by objectives. Thus, these six steps are involved in the implementation of a Weed and Seed program in order to increase the chances of success.

Results of Weed and Seed Program Studies

Studies have been conducted on initial Weed and Seed sites in order to evaluate the effectiveness of the programs. Allender and DePew (1999) conducted a study on Indianapolis' West District, which has been part of the Weed and Seed program since 1997. This area was infested with crimes ranging from murder and drug trafficking to auto theft and rape. During the first year of the Weed and Seed program, they documented an increase in the number of reported crimes. They attributed this to an increase in police visibility and surveillance, as well as community members openly providing information concerning drug trafficking and other crimes. With this "information" provided by community members, Allender and DePew (1999) report that this enabled police to effectively combat crime problems. The result was an eventual overall decrease in crime figures. Property crimes such as arson, a Part One crime, dropped 22.8%, while crimes against persons declined by 5.6% (Allender and DePew, 1999). This contributed to a total drop in actual reported crime of 17.6% for the second year of the Weed and Seed program as compared to the initial year in 1997 (Allender and

DePew, 1999). These figures provided by Lt. Allender and Sgt. DePew of the Indianapolis Police Department show a Weed and Seed program could be effective in fighting crime.

Other programs across the United States have seen similar success. Dunworth, et al., (1999) conducted a study on the Weed and Seed site in Hartford, Connecticut. The targeted area, which was granted in 1994, is known as Stowe Village. This area was a center for narcotics activity. The goals of this Weed and Seed program were to reduce drug-related crimes and violent crimes. Results of the study documented a drop by 45.9% in Stowe Village crime rates after the first two years of Weed and Seed (1994-1996). Dunworth, et al. (1999) also found a site in Pittsburgh that experienced a 24.4% decrease in crime in the same amount of time (1994-1996), as did the Hartford site. Unlike the other sites, this site did not have a name. North Manatee, a Sarasota, Florida suburb, saw a 17.9% decrease in crimes as compared to the rest of Manatee County, which only saw a 7.9% decrease in criminal activity (Dunworth, et al., 1999). Stoner Hill, a section of Shreveport, Louisiana, had an 11.1% decrease compared to just a 3.2% fall in crime for the whole city. These are just a few studies that indicate this Federal program is effective when implemented correctly and supported fully by the community.

The results of the previous Weed and Seed studies described above reveal that some sites incurred an initial increase in reported crime due to increased police visibility, then a general decline of crime overall. The other sites just experienced a decrease in crime from the start. Due to the documented effectiveness, Operation Weed and Seed has grown from its three original sites located in Kansas City, Omaha, and Trenton, to include over 200 of America's neighborhoods today. Funding has grown from a half a

million dollars for the three initial sites to now over 40 million dollars annually funding the 200 sites nationwide.

Oklahoma Weed and Seed Program

Oklahoma City joined the group of funded Weed and Seed cities in April 1995. However, implementation delays caused by policing efforts related to the bombing of the Alfred P. Murrah Federal building in early April 1995, the first year officially began in April 1996. Oklahoma City was chosen as a Weed and Seed city due to the hypothesized high-level of crime and due to the presumed number of low-income families. The Oklahoma City Weed and Seed project is headed by U.S. Attorney Dan Webber and includes other individuals ranging from the Oklahoma City mayor to local Oklahoma City Police personnel. As of 2000, the Oklahoma City Weed and Seed area receives funding in the amount of $175,000 annually for three years from the Department of Justice. The Oklahoma City target area is situated in the south-central section of the metro (Figure 1). The boundaries for the Weed and Seed area extend from the intersection of Reno Avenue and Western Avenue and travels south to 22nd Street. From 22nd Street, the boundary extends west to Blackwelder then south to 29th Street. From 29th Street, the boundary line extends westward to Interstate 44 and travels south to Portland Avenue. The boundary line diverts north to 29th street, then goes west to Tulsa Avenue. The boundary then closes off the polygon by traveling north along Tulsa Avenue to Reno Avenue. The 73108 zip code essentially makes up the body of the Weed and Seed area minus a small section on the south side of the area.

The Weed and Seed area, as defined for this study, has a population totaling 13,351 with 52% of that population in two age ranges, namely in the age range of 5-17 years of age (3,002 people) and 25-44 years of age (3,920 people) (Oklahoma City Office of Weed and Seed, 2000 and US Census 1990). These age ranges were devised by combining all the ages listed in the Census data into five categories for easier analysis. The ethnicity of the area shows a majority of the population being Caucasian (9,179 people), followed by Hispanics (2,491people) and African-Americans (1,795 people).

The targeted area has five schools, ranging from elementary to junior high schools, located in the 73108 zip code. These schools are Columbus, Rockwood, Westwood, Adams, and Pierce. Of these five schools, three (Columbus, Rockwood, and Westwood) have a majority population of children being from a Hispanic background. Adams and Pierce schools, on the other hand, have a majority of Caucasian students (OKC Office of Weed and Seed, 2000).

As stated earlier, one criterion for Weed and Seed funding is a presence of low-income neighborhoods. These are present in the Oklahoma City Weed and Seed area. Per the 4th year grant proposal written by the Oklahoma City Office of Weed and Seed (2000), the median household income of Oklahoma as a state was $25,741, per the 1990 US census. The Weed and Seed area's median household income is $12,717 a year, less than half of that of the State of Oklahoma. Of the 13,351 citizens of the Weed and Seed area, of the working age people, 2,097 made less than $10,000, while only 1,377 people made between $10,000 and $19,999 according to the 1990 US Census. Of the 13,351 people living in the 73108 zip code, which makes up the main body of the Weed and Seed area, only thirty-six people reported earning over $100,000. This indicates that this

is an extremely low-income area. As reported by the Oklahoma City Office of Weed and Seed (2000), there are 7,863 housing units in the area. Of this total, 6,408 are occupied. Renters occupy nearly half of the total occupied units in the area (2,573). Most of these units are single family, detached units, not duplexes or apartment complexes. While homes in the Oklahoma City area average $54,900 in value, the average home value in the Weed and Seed area is only $21,300. These figures meet the criteria of the Weed and Seed, that this is a predominately low-income area.

Preliminary Studies on the Oklahoma City Weed and Seed Program

Due to the recent establishment of the Oklahoma Weed and Seed, the majority of studies involving this area have been in the form of general information surveys. These surveys were distributed to residents in the target area in order to assess their opinions regarding their feelings of safety and concerns with their neighborhood. The Weed and Seed Director Survey of 1999 (OCJRC, 1999) and the Survey and Evaluation of the "Weed and Seed" program in Oklahoma City (OCJRC, 1998) found that 48% of the respondents do not feel safe in their neighborhood. The top area of concern for residents was drug dealing. Residents in these surveys also provided possible solutions to these problems. Possible solutions include: increasing street lighting, providing community policing to control drug trafficking, educating teens regarding pregnancy, using civic organizations, and mandating convicted non-violent crime offenders to serve community service hours in the Weed and Seed area. Overall, the results of these two initial survey studies indicate that residents living in the Weed and Seed area do not feel safe. This

provides support for the use of the Weed and Seed program in order to increase these individuals' feelings of safety and improving their quality of life.

In addition to conducting these surveys, officials with the Oklahoma City Weed and Seed area also compared crime levels from the initial funding year in 1997 to 1999 in order to gain additional funding. When directly comparing the number of crimes from 1996 to 2000, they found a decrease in the level of crime. This initial report indicates a decrease in crime in the Weed and Seed area. However, it has not been studied if that rate is lower or higher than the general Oklahoma City metropolitan area and if these results are due specifically to the Weed and Seed program.

CHAPTER III

METHODOLOGY

Research Question I Methodology

Research Question I asked whether or not the block groups of the Weed and Seed area exhibited a higher rate of overall reduction in Part One crime than the rest of the combined block groups of the Oklahoma City area. The data used to analyze this question were census block group data and Part One crime data provided by the Oklahoma Criminal Justice Resource Center located in Oklahoma City.

To show the changes in crime totals by year, maps were created in ArcView to show the density per square mile of Part One crime in Oklahoma City and the Weed and Seed, and how that density pattern shifted from year to year. This technique illustrated the areas of the Weed and Seed and Oklahoma City that had higher crime totals than other areas in the metro area. The density per square mile is not simply the number of crimes per square mile. The maps essentially were made up of a raster image comprised of individual cells laid over a vector image. Each cell of the density layer is approximately 100 meters square, not one mile. These cells represent an average of the number of Part One crimes contained inside each cell and then calculated to a per square

mile density value. The calculated averages for the raster cells were then categorically distributed in one of four ranges depicting from low to high averages of Part One crime per square mile. This process was conducted internally in ArcView using the Spatial Analyst extension.

Other maps used to visually show the changes in Part One crime were Part One crime per 1000 population. These maps were designed to visually display data at the block group level for each year of the study. Data used for these maps were provided by the US Census Bureau in the form of population totals for each Oklahoma City block group including those associated with the Weed and Seed area. These maps were produced in ArcView like the density maps.

The steps taken in producing these maps entailed classifying the Part One crime totals per 1000 population into five equal interval categories. To obtain these figures, the Part One crime rate per 1000 persons had to be calculated. This was done by taking the block group total of Part One crimes and dividing that number by the population of the corresponding block group. The calculated per capita total was then multiplied by 1000 to give the number of Part One crime per 1000 population by block group. This calculation was performed for each year of the study, 1996-2000.

Research Question I also asked if the block groups associated with the Weed ad Seed area had a significant difference in the total percentage of overall change in Part One crime versus the block groups associated with a two-mile zone around the Weed and Seed area. It was also asked if there was a significant difference between the block groups of the Weed and Seed versus the remaining block groups (outer zone) excluding the Weed and Seed and the two-mile zone block groups, as well as the comparison of the

two-mile zone block groups to the outer zone block groups. Data used to analyze this question came from calculations performed prior to the statistical tests. The total percentage of change was calculated by taking the difference in Part One crime for each year to the next and dividing those differences by the earlier year's total. The statistical test used to analyze this question was the t-test. Three different t-tests were run, one on the Weed and Seed block groups versus the two-mile zone block groups, one on the Weed and Seed block groups versus the outer zone block groups, and one on the two-mile zone versus the outer zone block groups. The results from the t-tests indicated the significance of the difference between the three tested groups. The significant P-values for all three tests were chosen at the .05 significance level and each test was performed as a one-tail test. The corresponding map for this question was created in ArcView and displays the three zones of block groups and the level of total percentage of change in overall Part One crime for Oklahoma City and the Oklahoma City Weed and Seed area.

Research Question II Methodology

Research Question II asked what sociodemographic characteristics were most closely associated with Part One crimes in the Weed and Seed area, as well as the Oklahoma City metropolitan area. Three different sociodemographic characteristics, age, per capita income, and percent population below poverty were analyzed. These 1990 data were extracted from the Census CD provided by the US Census Bureau.

A regression analysis was used to compare these three characteristics to the total percentage of overall change in Part One crime. The first hypothesis proposed that per capita income would have a significant effect on Part One crime rates. The predictor

variable was per capita income. The significance level used for this regression test was the .05 level.

The second hypothesis associated with this research question proposed that age would be significantly related to the total percentage change in Part One crimes. Results of this test were displayed in table form. It was hypothesized that the younger the average age of a block group, the greater the total percentage change in Part One crimes. The age variable was broken into four separate categories, 5-17, 18-34, 35-64, and 65 plus. The predictor value for this test was age. The significance level for this regression test was set at the .05 level.

The third hypothesis associated with this research question proposed that block groups with high numbers of people below poverty would experience higher levels of Part One crimes. A regression analysis was utilized to test this hypothesis. The poverty figures were broken into four categories of age ranges. These were 0-17, 18-34, 35-64, and 65 plus. The significance level for this test was set at .05.

CHAPTER IV

RESULTS

Results of Research Question I

For the purpose of this question, the objective was to determine if the block groups associated with the Weed and Seed area exhibited a higher rate of overall reduction of Part One crimes than the rest of the combined block groups of the Oklahoma City area. It was hypothesized that Part One crimes in the Oklahoma City Weed and Seed area decreased at a greater rate than the Part One crimes in the remaining Oklahoma City block groups. It was found that from 1996 to 2000, the Oklahoma City Weed and Seed area experienced an overall reduction in Part One crime of 51.78%. Specifically, Part One crime rates dropped from 7,460 in 1996 to 3,597 in 2000. The general Oklahoma City area experienced an overall 13.9% decrease in Part One crime from 1996 to 2000. This included the Weed and Seed area. Part One crimes dropped from 61,558 offenses in 1996 to a 2000 total of 52,999 offenses (Table 1). When comparing the rates of crime reduction, the Oklahoma City Weed and Seed area exhibited a greater reduction rate of Part One crimes than the general Oklahoma City area, thus, the research hypothesis, crime decreases at a greater rate than the rest of the Oklahoma City area, was supported.

Table 1

Part One Crime Totals for Oklahoma City 1996-2000

Part One Crimes	1996*	1997*	1998*	1999*	2000*
Oklahoma City	61,558	51,128	52,285	49,088	52,999
W & S	7,460	6,634	4,008	3,637	3,597

*Totals derived from geocoded addresses in ArcView. 99% match rate for each year.

In order to document the change in crimes per 1000 people, the change in density of Part One crimes per square mile needed to be addressed first. As evidenced by the 1996 density map (Figure 2), the highest densities of Part One crimes were located primarily in and around the immediate vicinity of the Weed and Seed area. Specifically, the highest densities of these crimes were located in the southern regions of the Weed and Seed area (Figure 3), which averaged between 809 to 1078 offenses per square mile when compared to the remainder of the Oklahoma City area. The Weed and Seed area was predominately in the mid to high ranges of crimes per square mile in 1996 as evidenced in Figure 3. The elevated levels of density roughly occur within a two to three-mile radius of the Weed and Seed area. It is possible that crime has just shifted south out of the Weed and Seed area due to the increased police surveillance in that area.

In 1997, the crimes per square mile density (Figure 4) did not change dramatically for the overall metro area of Oklahoma City. Inside the Weed and Seed area, the area of high density in 1996 did not decrease greatly as evidenced in Figure 5. Also, Figure 4 suggests that Part One crimes are still predominately higher around the Weed and Seed area. As stated earlier, the first year of the Weed and Seed program was in 1996.

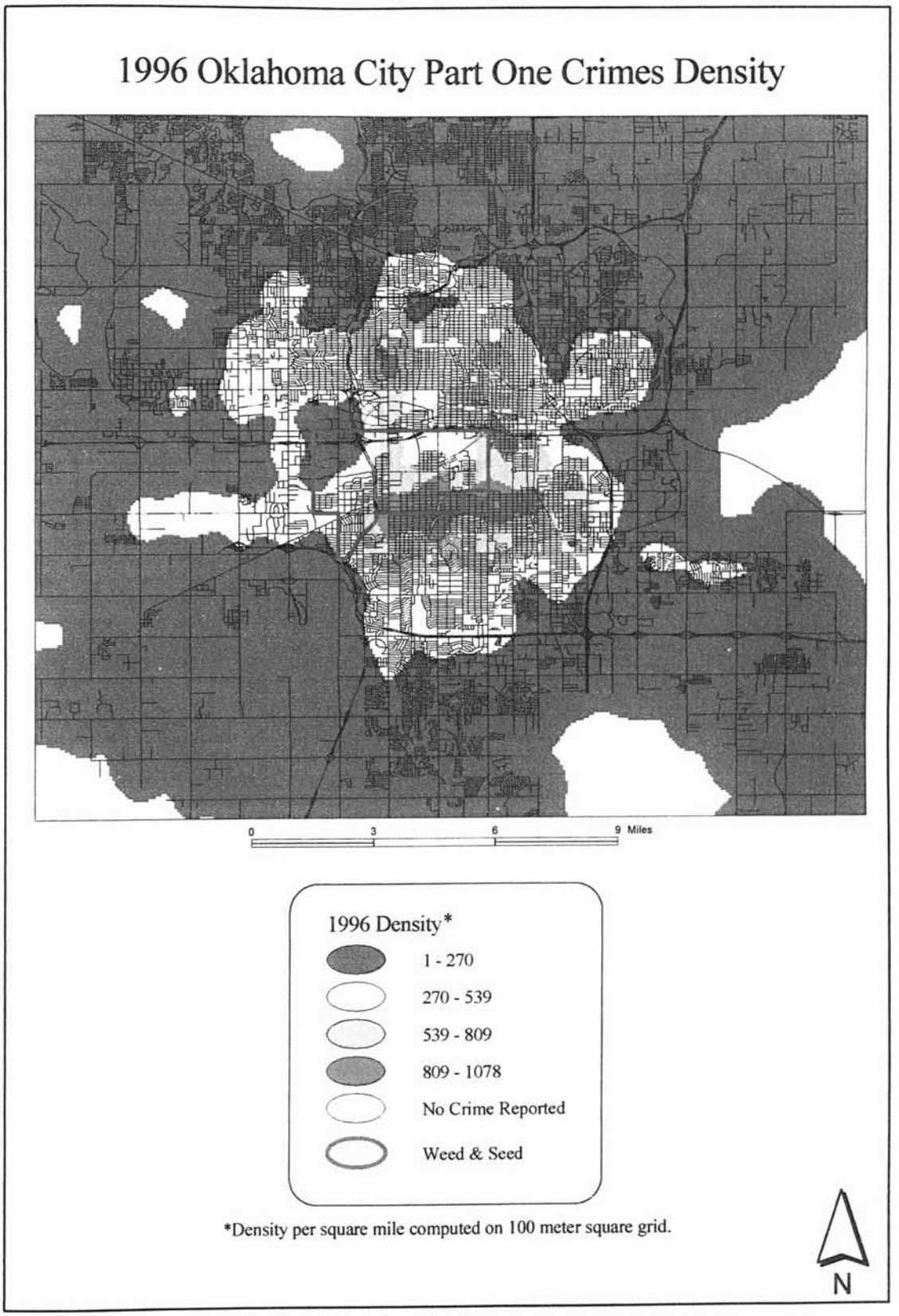

Figure 2. 1996 Oklahoma City Part One crimes density

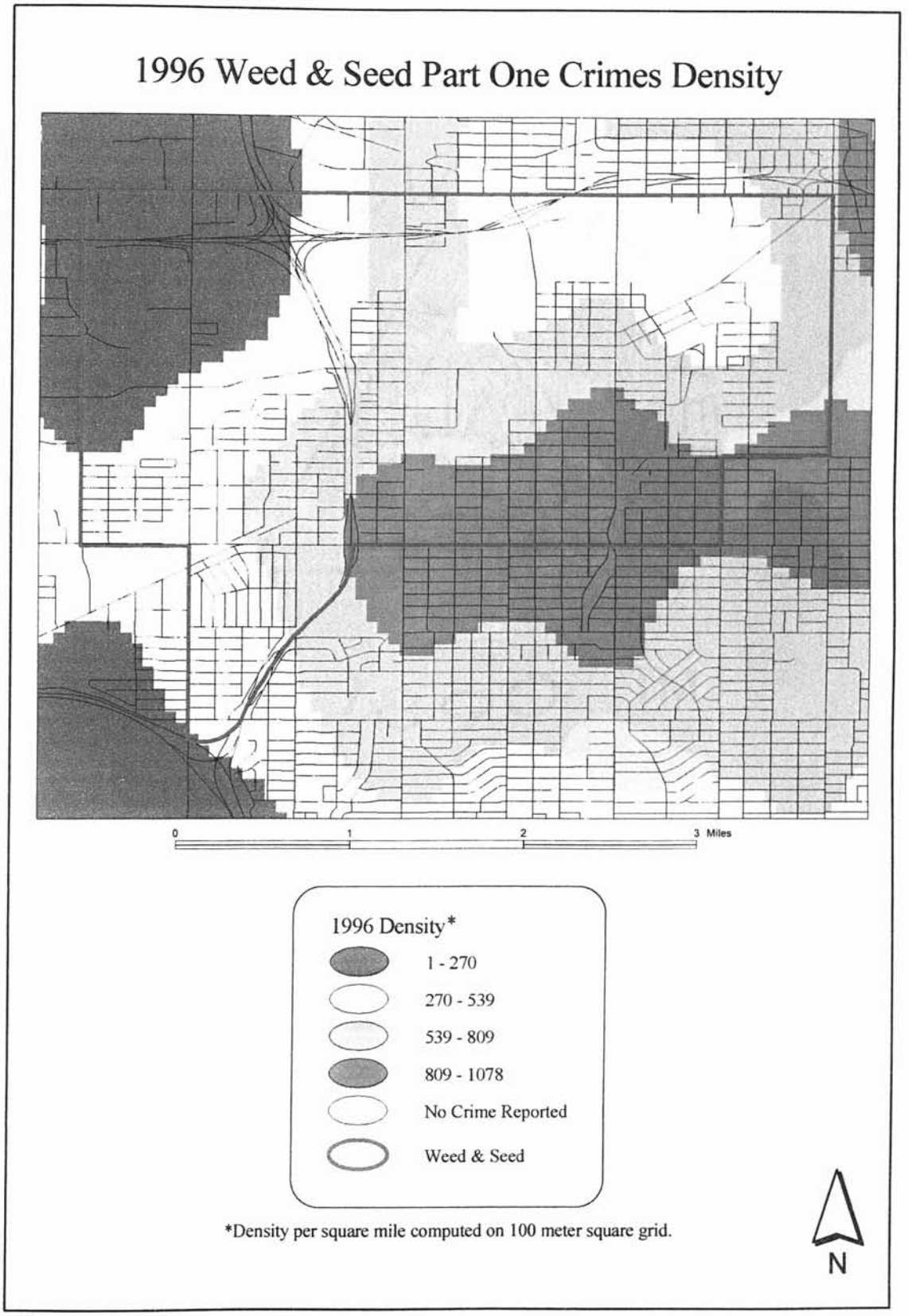

Figure 3. 1996 Weed & Seed Part One crimes density.

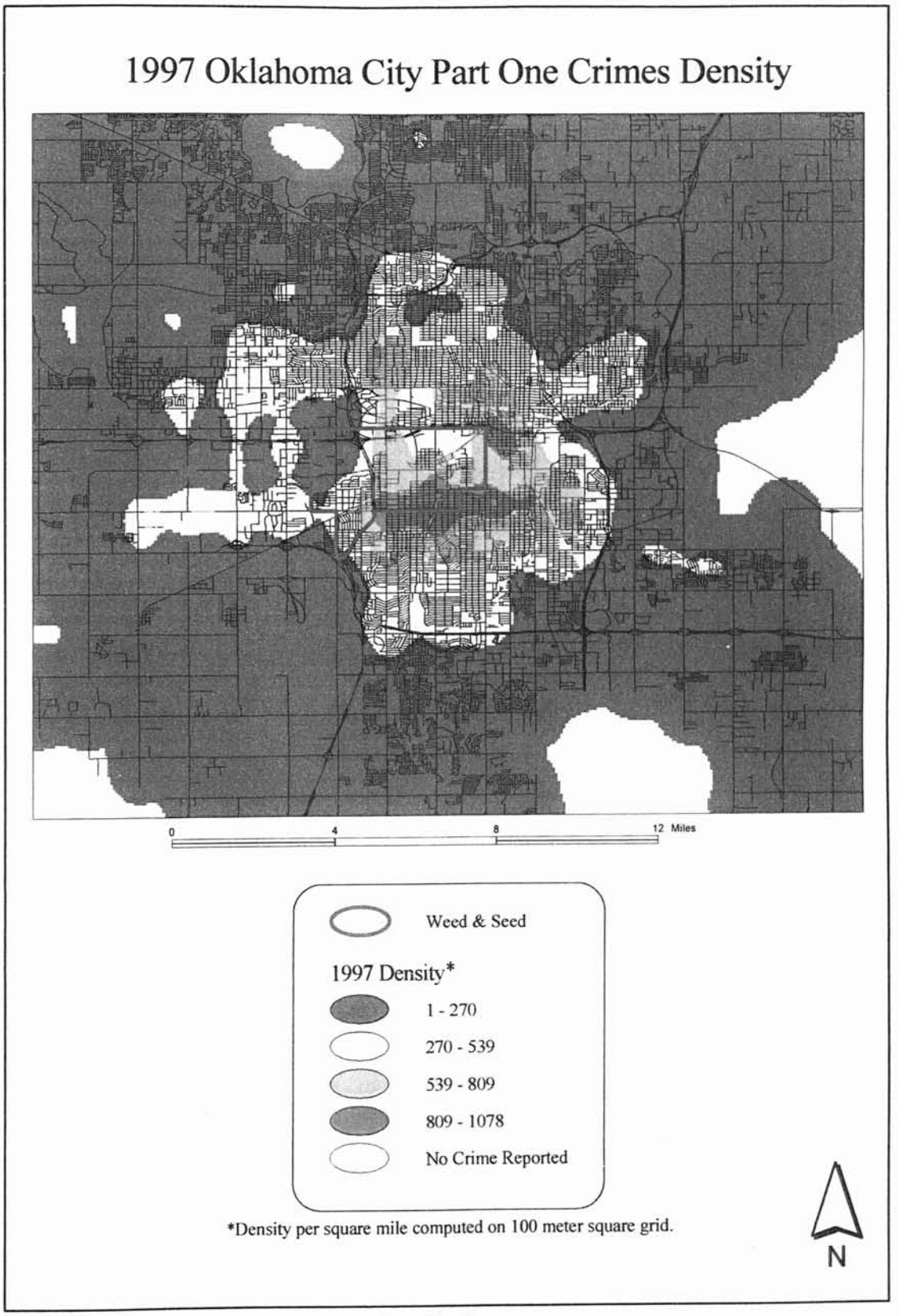

Figure 4. 1997 Oklahoma City Part One crimes density.

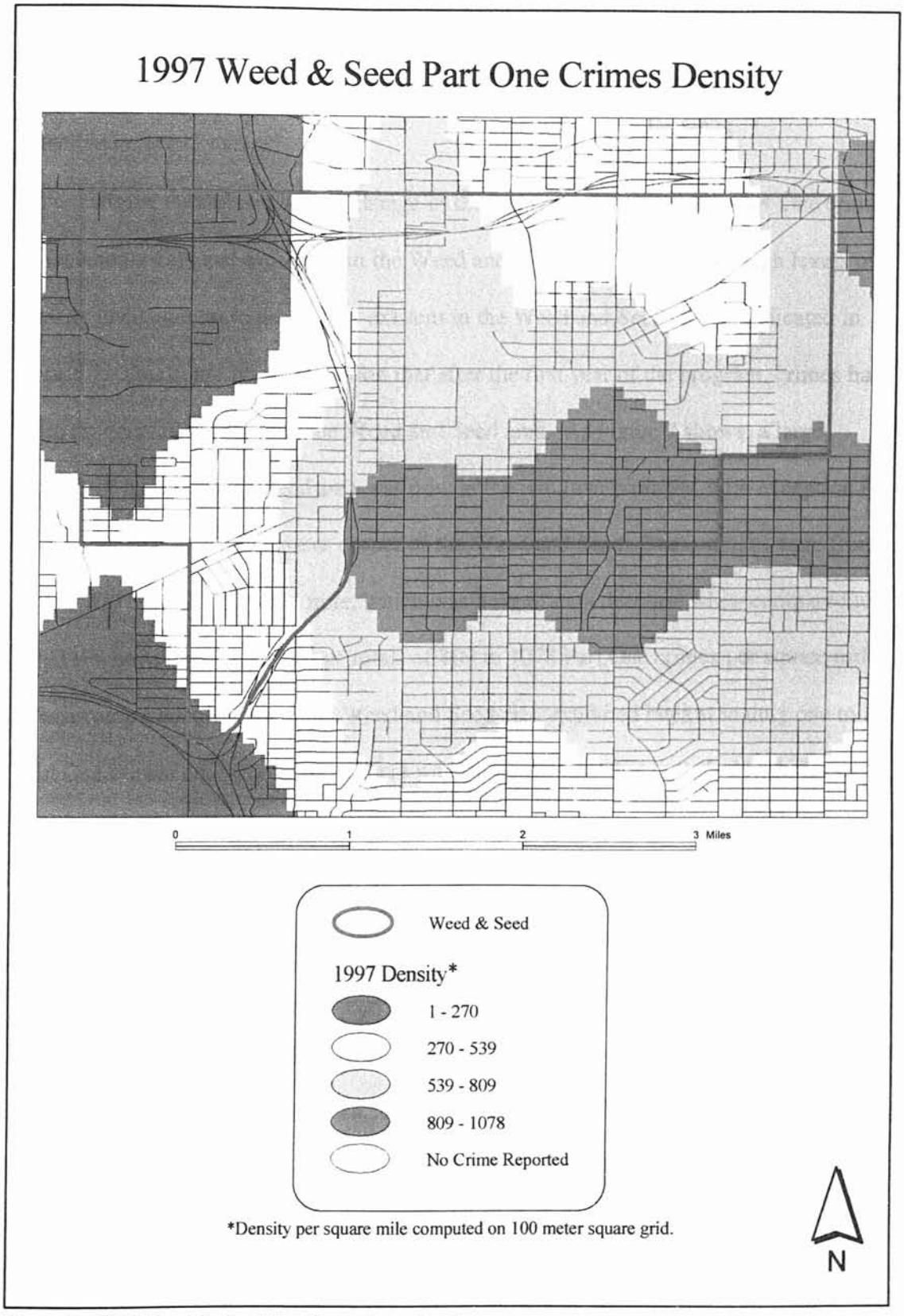

Figure 5. 1997 Weed & Seed Part One crimes density.

Therefore, there was a minimal change in density patterns from 1996 to 1997 in the Weed and Seed area, which suggests that the Weed and Seed program was minimally effective in its early stages.

Figure 6 exhibited a large change in the density patterns of 1998 Part One crimes in Oklahoma City and especially in the Weed and Seed area. The mid to high levels of density intensities were nearly non-existent in the Weed and Seed area as indicated in Figure 7. This could be an indication that after the first year of the program, crimes had been dramatically reduced in the Weed and Seed area. As Figure 7 shows, a large portion of the Weed and Seed area was now in the two lowest ranges, with exception for a small area in the southwestern corner of the Weed and Seed. These ranges were from one to 270 crimes per square mile, which was a significant decrease when compared to 1997 (Figure 5), which had range totals of 809 to 1078 Part One crimes per square mile. When compared to Figure 6, the Weed and Seed area exhibited rates at mainly one to 270 Part One crimes per square mile. There were three distinct "hot spots" of high-density crime rates indicated in Figure 6. Two were directly south of the Weed and Seed area, which can possibly be attributed to the displacement of these crimes out of the Weed and Seed due to the increased patrolling of the Oklahoma City Police Department within the Weed and Seed area. The other "hot spot" was located in the north-central section of the Oklahoma City downtown area, which could also possibly be attributed to the stepped up policing in the Weed and Seed area. After the first year of Operation Weed and Seed, the density of Part One crimes was greatly reduced as evidenced by a 39.6% reduction in Part

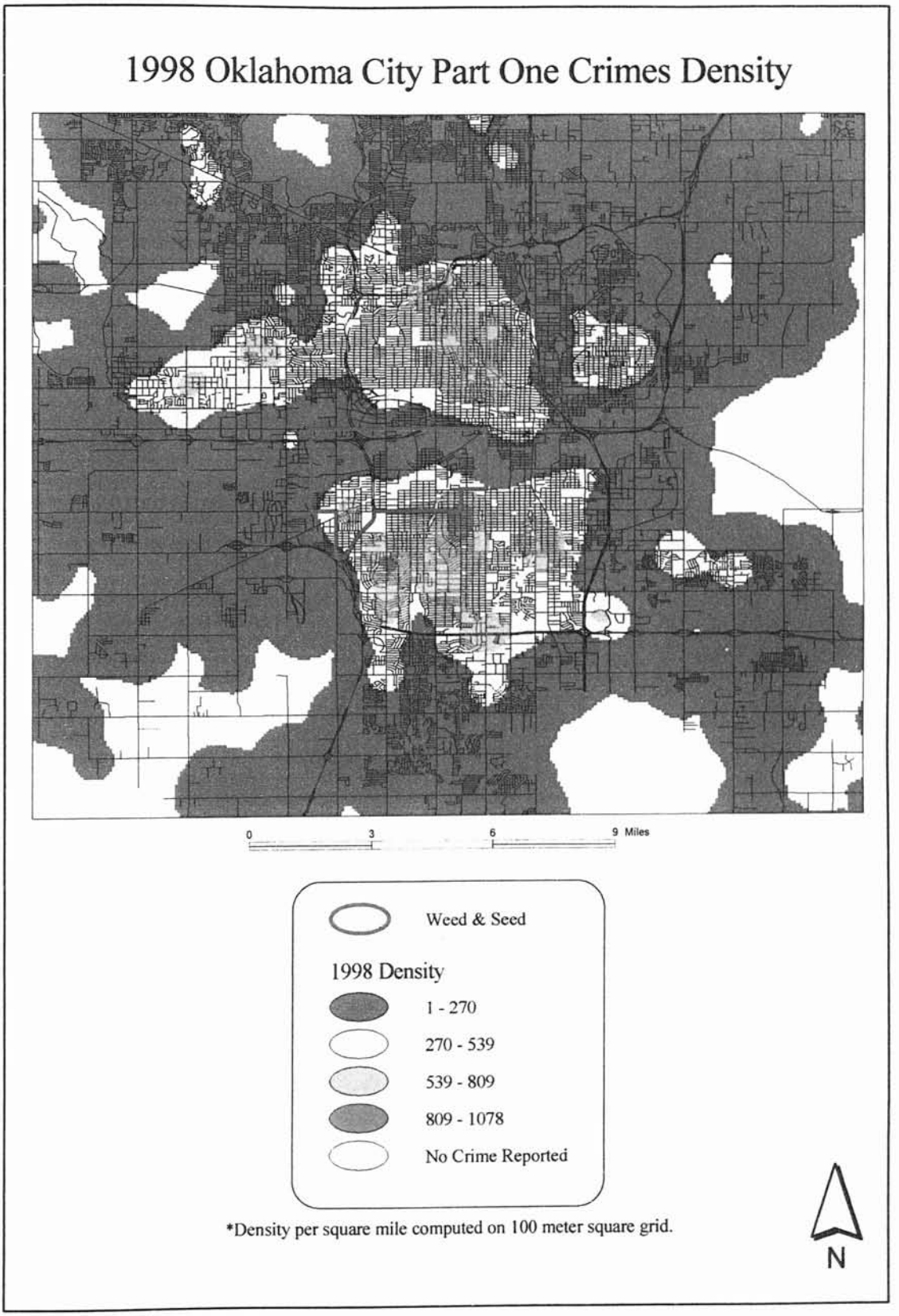

Figure 6. 1998 Oklahoma City Part One crimes density.

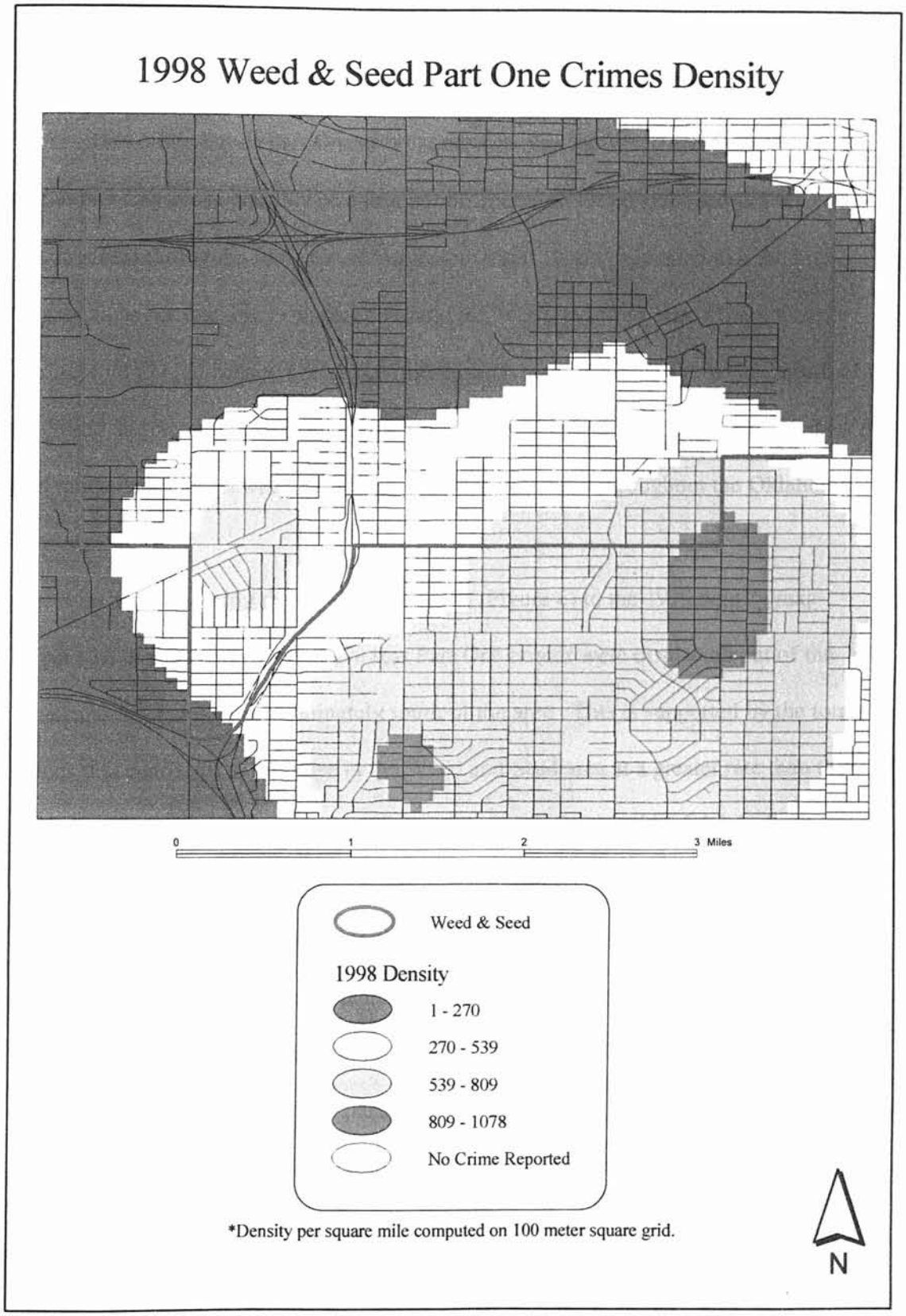

Figure 7. 1998 Weed & Seed Part One crimes density.

One crimes between 1997 and 1998. However, the Oklahoma City metropolitan area increased in total Part One crimes by 8.9% during the same period.

This difference in Part One crime totals between the Weed and Seed area and Oklahoma City could possibly be a product of Operation Weed and Seed and its effectiveness during the first year of implementation. It also appeared that the high-density areas became less centralized around the Weed and Seed area. There were two distinct mid to high density per square mile regions located directly south and north of the Weed and Seed area as indicated in Figure 6. Also, there were now small pockets of mid range densities, as well as mid-high densities scattered throughout the Oklahoma City area.

When comparing the 1998 density map (Figure 6) to the 1999 density map (Figure 8), there is reason to believe that Part One crimes were displacing out of the Weed and Seed area to predominately south of the area. This is supported by the total crimes that continued to decrease in the Weed and Seed area at a greater rate than the totals for the Oklahoma City metropolitan area, which decreased by 6.1% in 1998 after the prior year increased by 8.9% in total Part One crimes citywide.

In 1999, there was one small area on the southeast corner of the Weed and Seed area that indicated a high-density pattern of crimes per square mile. This was the only location in Oklahoma City that indicated crime rates higher than 809 Part One crimes per square mile. However, when comparing 1999 Oklahoma City densities (Figure 8) to 1999 Weed and Seed densities (Figure 9), the Weed and Seed area indicated that there were no areas of mid or high density levels inside the Weed and Seed area.

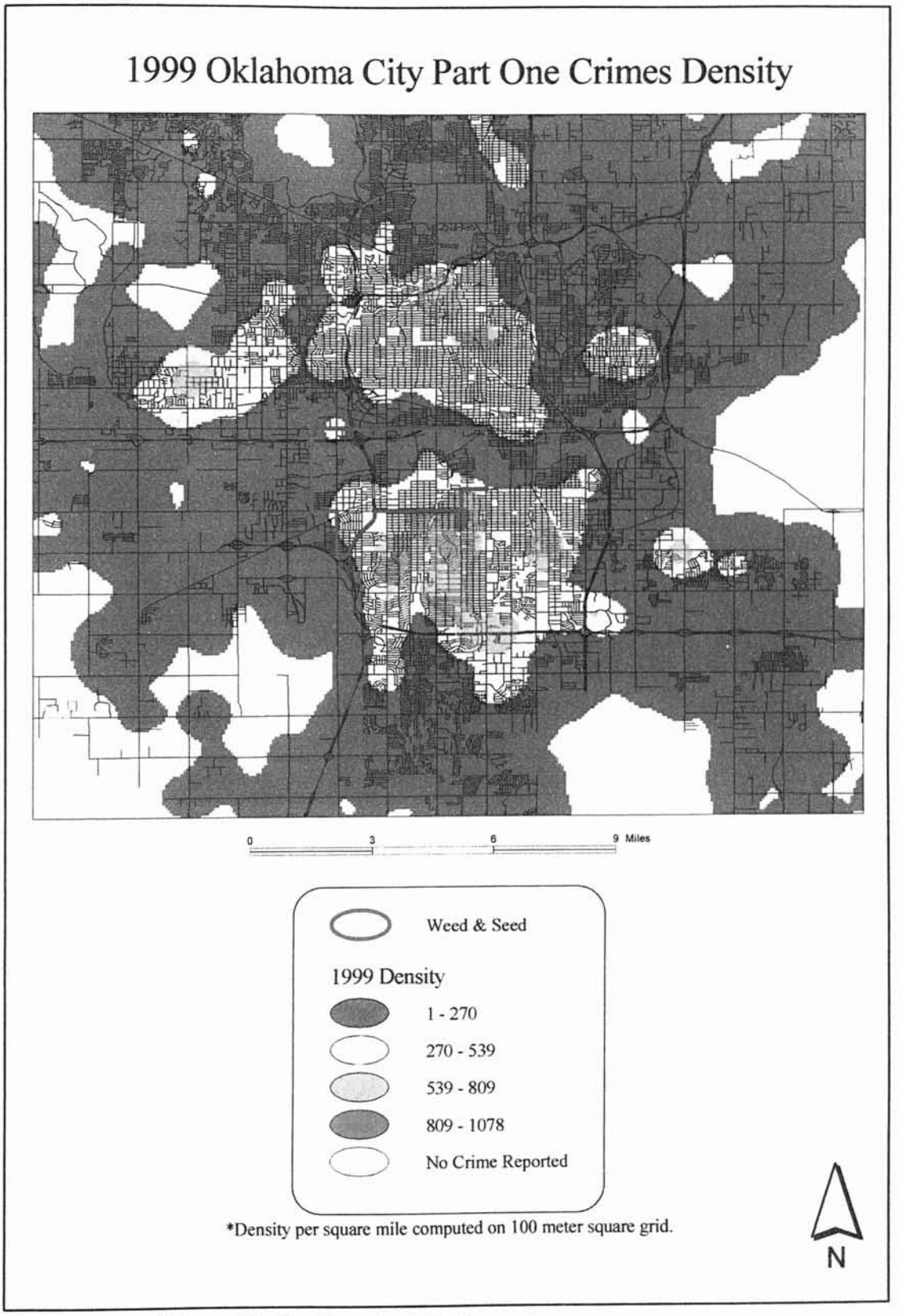

Figure 8. 1999 Oklahoma City Part One crimes density.

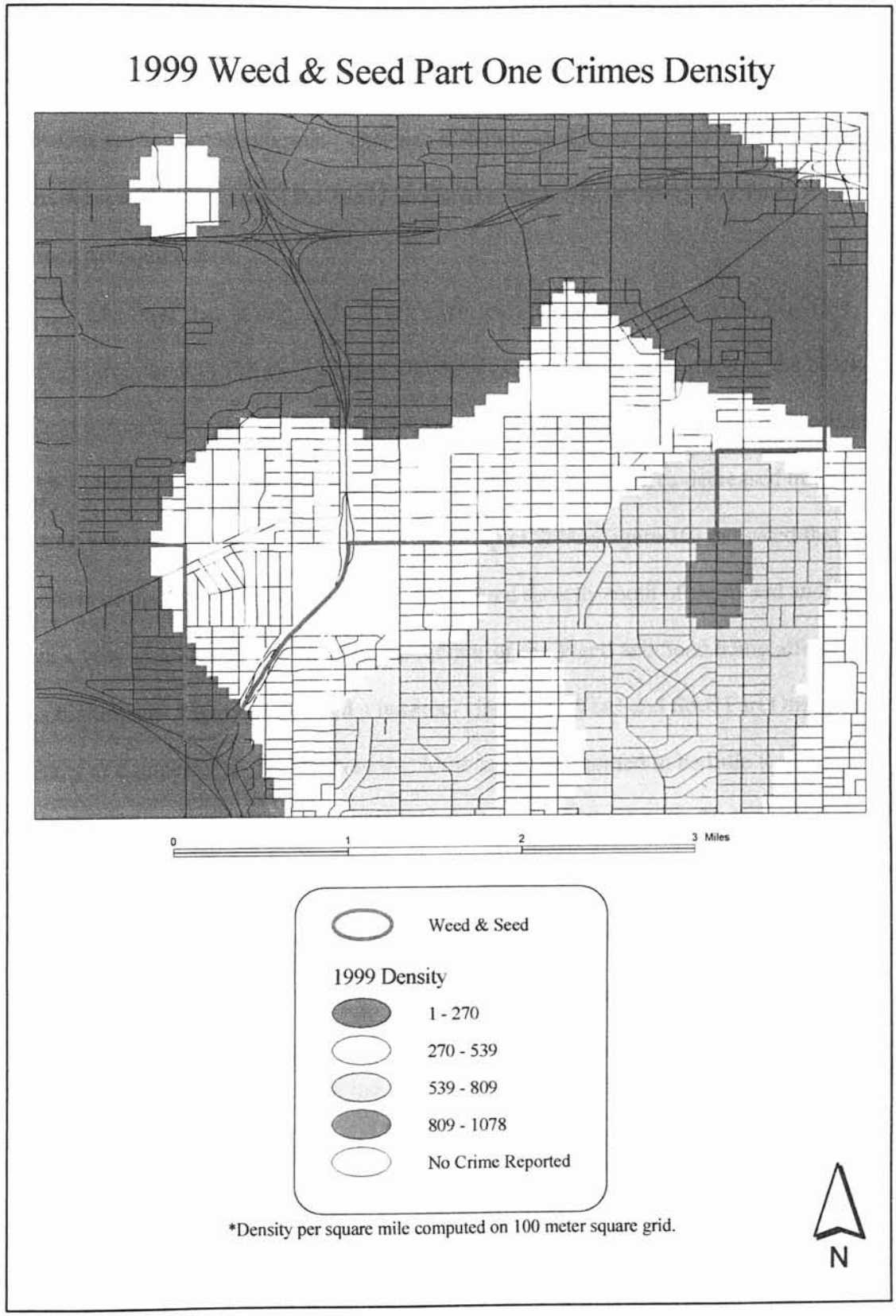

Figure 9. 1999 Weed & Seed Part One crimes density.

The area inside the Weed and Seed boundaries that was indicated as mid to high density in 1996, 1997, and 1998 (Figures 3, 5, and 7) was then in the density range of 270 to 539 Part One crimes per square mile. This was also indicated in the ranges from Figure 8, which displayed that area of the Weed and Seed to be between 270 to 539 Part One crimes per square mile.

The final year of this study, 2000, experienced an overall increase in Part One crimes throughout the block groups of Oklahoma City, with the exception of the block groups associated with the Weed and Seed area. Oklahoma City block groups increased 8.3% in total crimes, while block groups in the Weed and Seed area decreased minimally (1.1%) between 1999 and 2000. The density map of 2000 (Figure 10) indicated that the majority of the high-density areas were still located directly south of the Weed and Seed with a very small section in the southeast corner of the Weed and Seed being affected by this high range. Figure 11 showed a minimal change in Weed and Seed Part One crime density as compared to 1999 (Figure 9). Although there seemed to be little to zero change, crimes reduced by 1.1% in 2000 in the Weed and Seed area. There were five distinct "hot spots" which formed in the vicinity south of the Weed and Seed area. This observation continues to give the possibility that the Weed and Seed program is effective in decreasing Part One crimes in the target area by displacing the crimes to other areas in Oklahoma City. However, this cannot be stated as a fact due to lack of data.

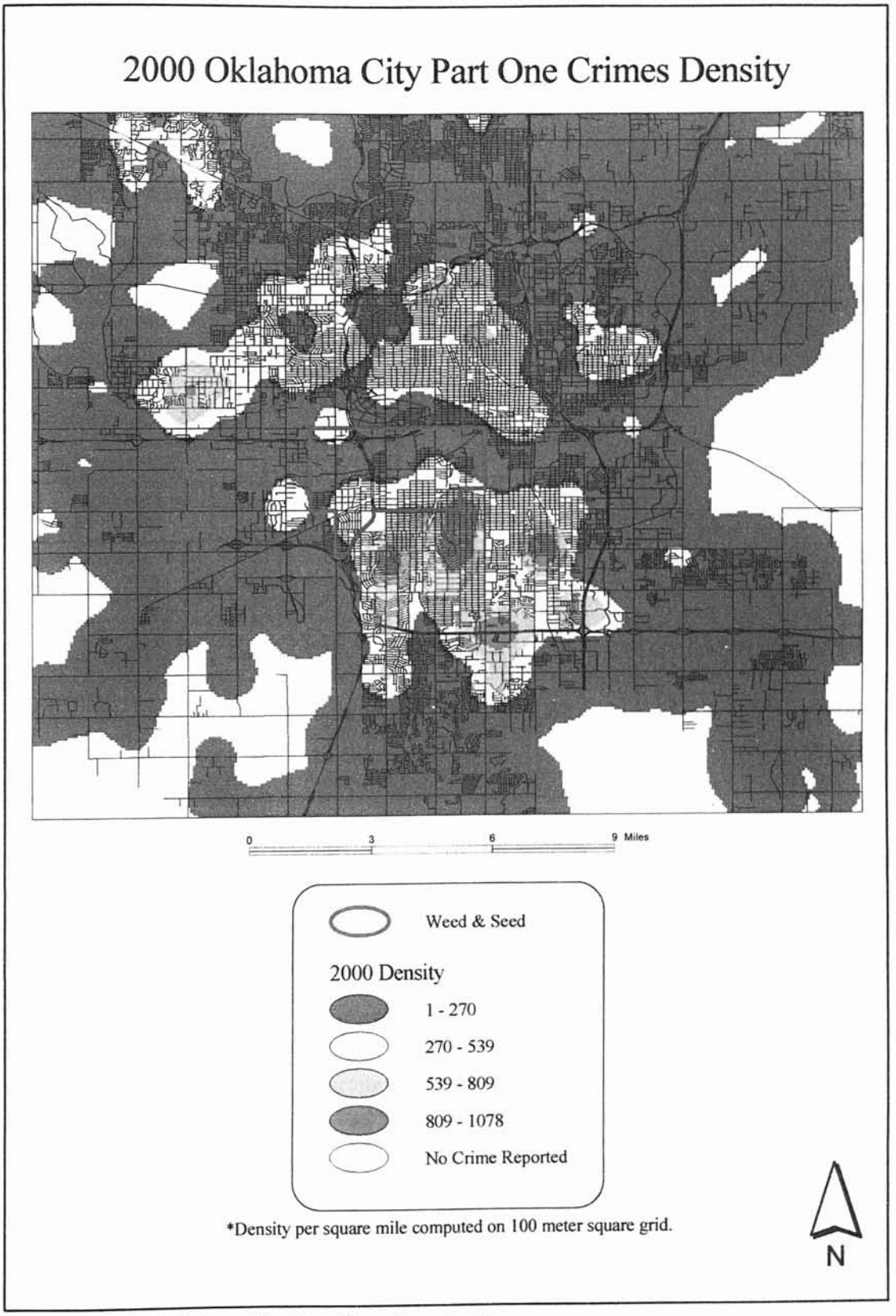

Figure 10. 2000 OKlahoma City Part One crimes density.

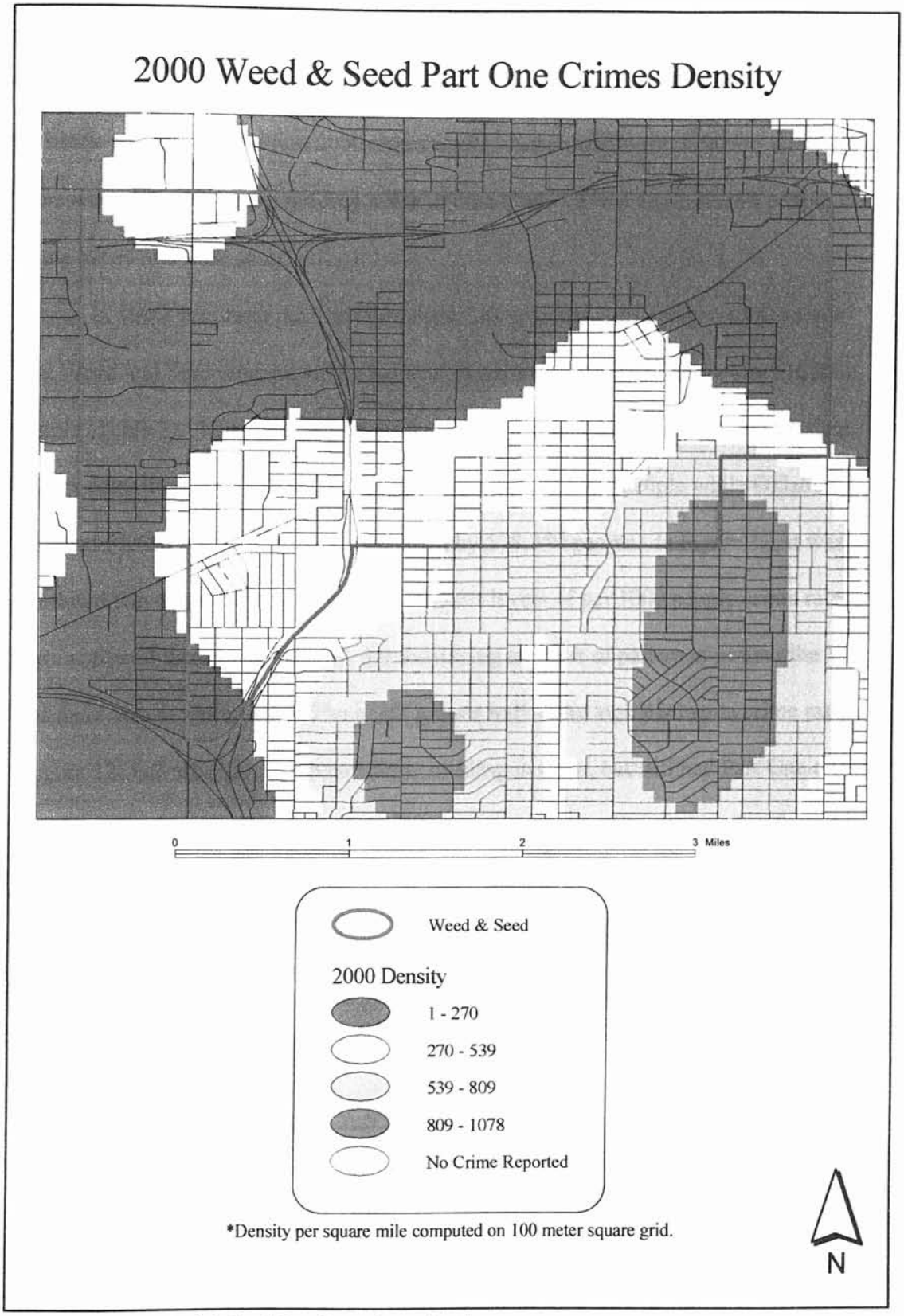

Figure 11. 2000 Weed & Seed Part One crimes density.

In addition to examining density levels of Part One crimes and understanding the change in those densities, per capita crime rates (crimes per 1000 people) were examined by block groups from 1996 to 2000 respectively. According to the 1990 US Census, there were 578,750 people residing in Oklahoma City. Of this total, 22,993 people lived in the Weed and Seed area.

In 1996, the crime rate for Oklahoma City was 106.4 crimes per 1000 people. The Weed and Seed area, however, had a 1996 crime rate of 324.4 crimes per 1000 people (Table 2). This figure was high due to the fact that there were 7,460 Part One crimes committed in the Weed and Seed compared to 22,993 people while Oklahoma City had 61,558 Part One crimes committed by 578,750 people. In Figure 12, it was exhibited that the block groups with the highest levels of per 1000 people crime rates were scattered throughout the city, not displaying any sort of pattern in or near the Weed and Seed area as anticipated. The block groups indicating high per capita crime rates (Figure 12) had small to zero populations residing in them, but still had Part One crimes committed in the boundaries of these block groups. This can be attributed to those block groups being predominately businesses or open areas.

Table 2

Part One Crimes Per 1000 People-Oklahoma City & Weed and Seed

Part One Crime Rates	1996	1997	1998	1999	2000
Oklahoma City	106.36	88.34	90.34	84.82	91.57
Weed & Seed	324.45	288.52	174.31	158.18	156.44

OKC pop. – 578,750 W & S pop. – 22,993

The 1996 Weed and Seed area crime rates, as displayed in Figure 13, exhibited no type of pattern in the block groups as far as neighborhoods with higher rates of crime than other neighborhood areas. The higher crime rated block groups tended to be those primarily dominated by businesses. Most of the 1996 Weed and Seed crimes took place along the primary roads containing predominately businesses. However, the block groups in the northwest section of the Weed and Seed were continuously in the low category of per capita crime rates due to the area being dominated by large companies and warehouses, as well as the flood plain for the North Canadian River. In 1996, Weed and Seed block groups ranged from as low as 2.445 Part One crimes per 1000 people to as high as 1583.333 crimes per 1000 people (Figure 13), with the average being 324.45 crime per 1000 people.

The 1997 crime rate for Oklahoma City decreased to 88.3 crimes per 1000 people (Table 2), while the Weed and Seed experienced a decrease in 1997 to 288.52 crimes per 1000 people. There was little change indicated between the 1996 (Figure 12) and 1997 (Figure 14) block group maps. This indicated little change in crime levels between the two years. The Weed and Seed area did not change much between 1996 and 1997, experiencing a total reduction of only 826 crimes between the first two years of this study's time frame. Figure 15 indicated this small reduction by having only a couple block groups changing ranges. This occurred in the northern sections of the Weed and Seed area. There were still two Weed and Seed associated block groups, one inside the area and one on the southern border of the area that indicated per capita crime rates in the 612.4 to 1583.3 crimes per 1000 people range.

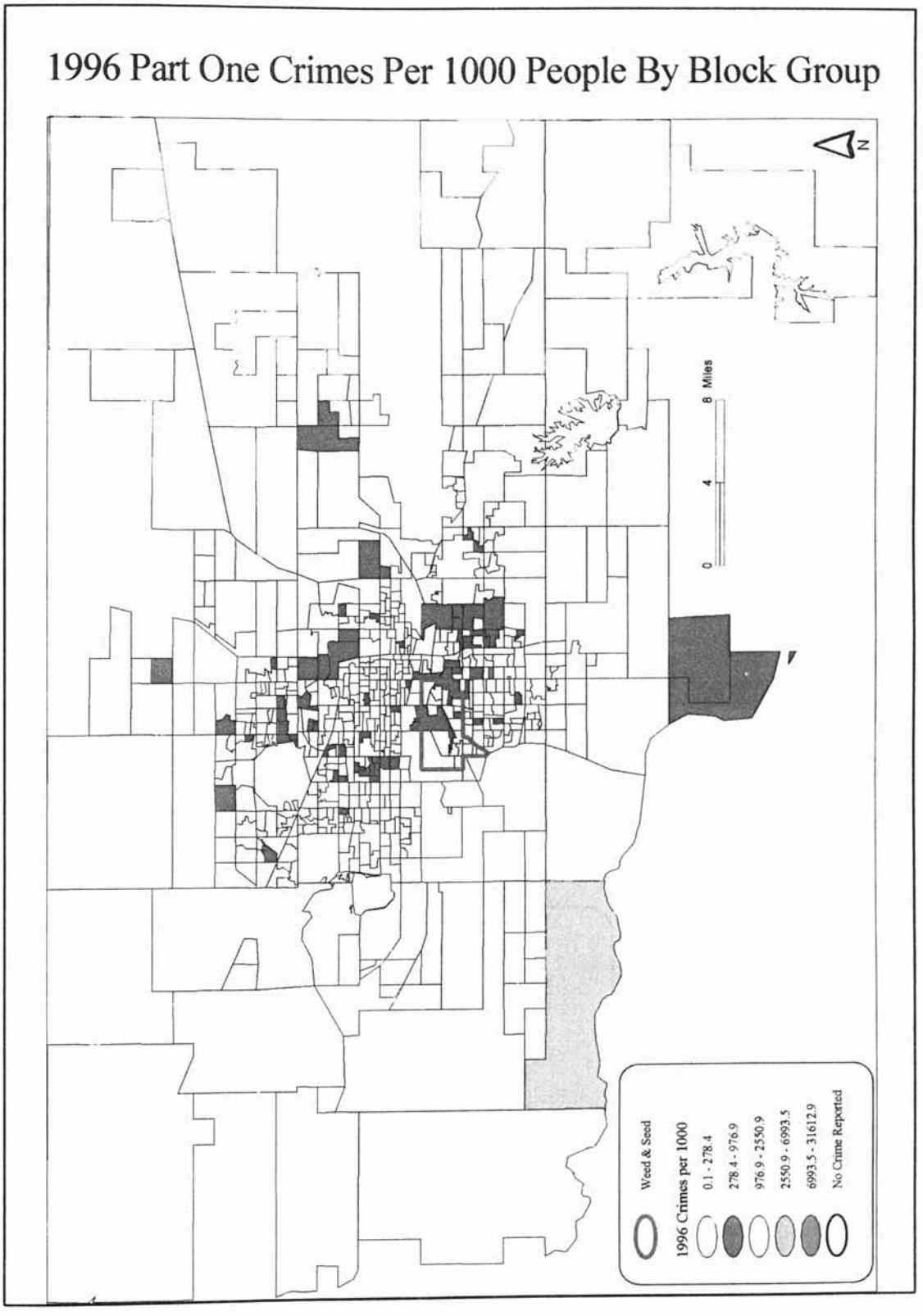

Figure 12. 1996 Part One crimes per 1000 people by block group

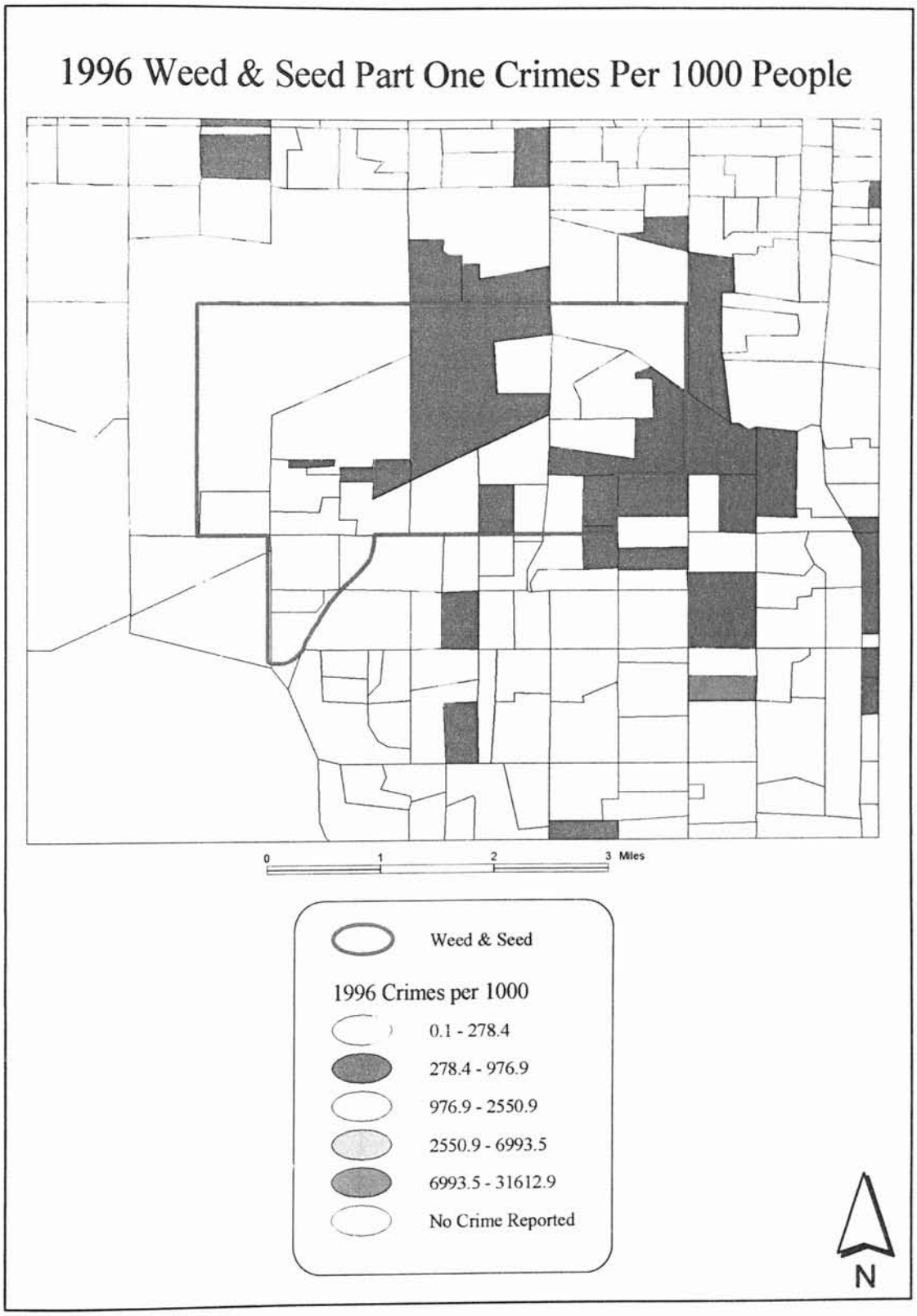

Figure 13. 1996 Weed & Seed Part One crimes per 1000 people.

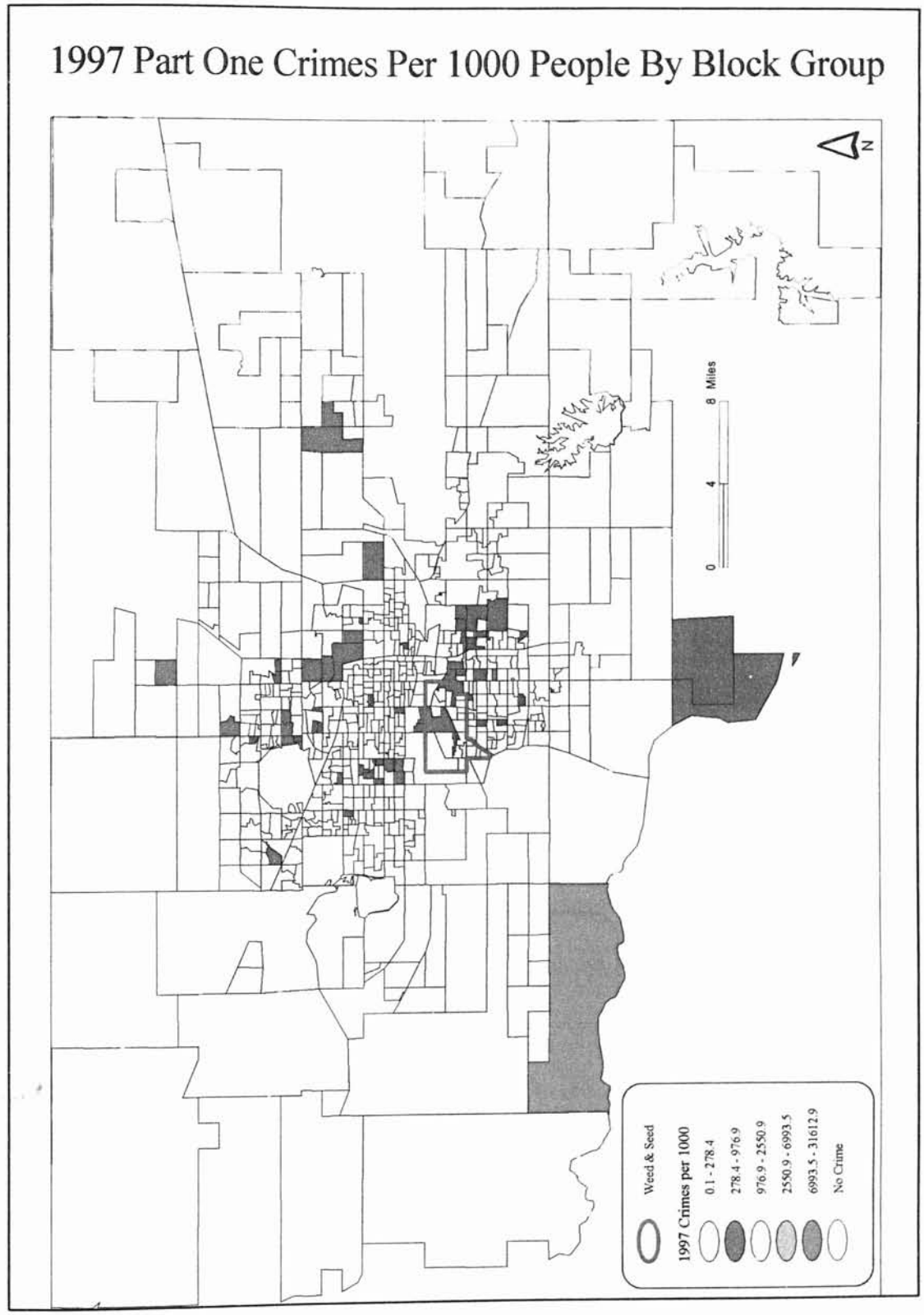

Figure 14. 1997 Part One crimes per 1000 people by block group.

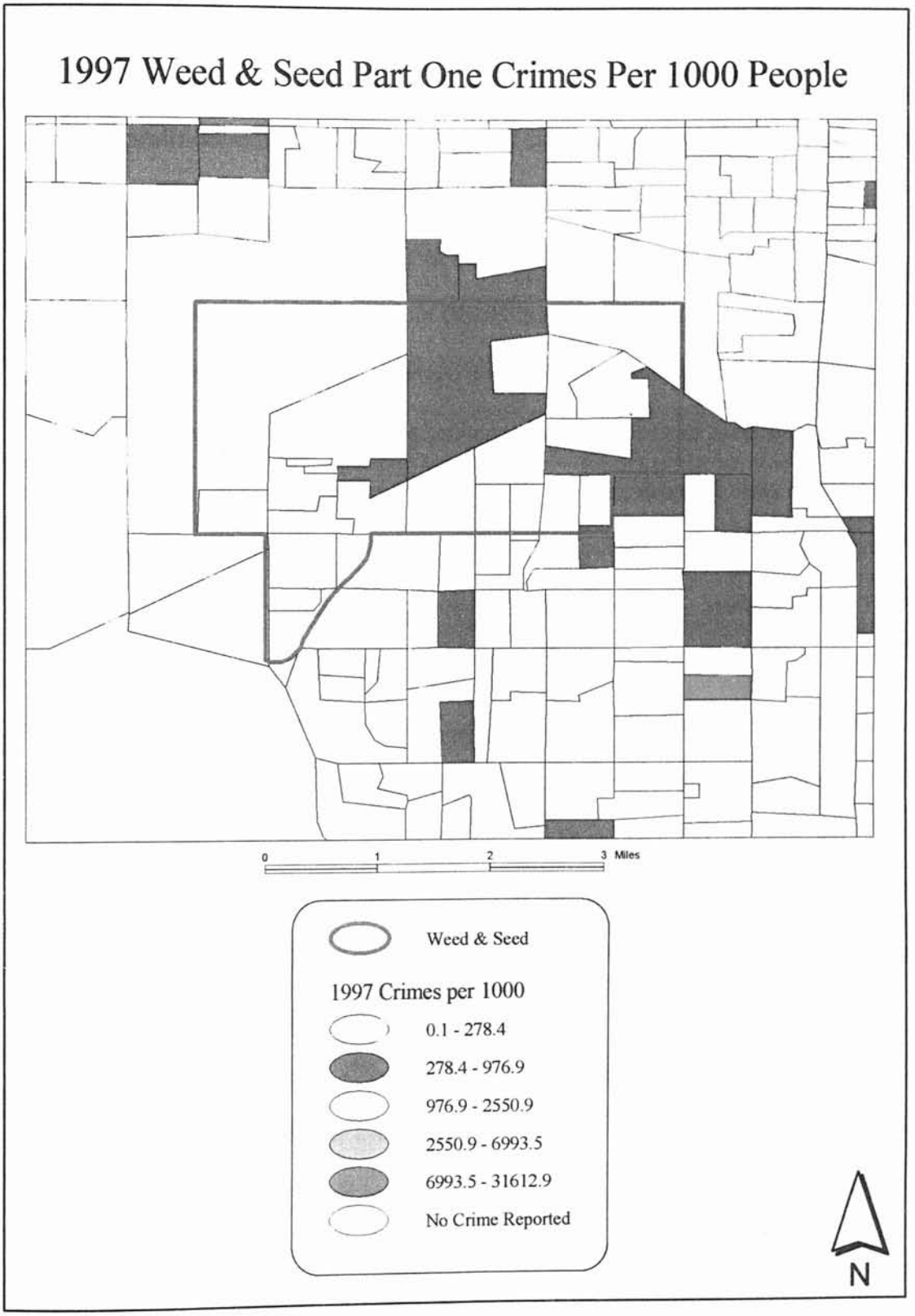

Figure 15. 1997 Weed & Seed Part One crimes per 1000 people.

In 1998, the number of Part One crimes per 1000 people rose to 90.3 in the Oklahoma City area as indicated in Table 2. However, during 1998, the Weed and Seed area dramatically decreased from the 1997 total of 288.5 to 174.3 crimes per 1000 people in 1998 (Table 2), the second complete year of Operation Weed and Seed. This change was represented in Figure 16 exhibiting the increase of block groups around the Weed and Seed area, as well as other sections of Oklahoma City, in the higher per capita crime rate levels. Figure 17 exhibited the decrease the Weed and Seed area experienced during this year. There were no block groups associated with the Weed and Seed area that were in the highest level of per capita crime rates. The dominating ranges for this area were now 120.7 to 210.9 crimes per 1000 people. The northwest area of the Weed and Seed exhibited a crime rate of less than 2.445 crimes per 1000 people occurring in 1998. The overall total for Oklahoma City decreased in 1999 to 84.8 crimes per 1000 (Table 2). Also decreasing in 1999 was the Weed and Seed area to 158.1 crimes per 1000 people (Table 2). Figure 18 indicated 1999 per capita crime rates to be higher in block groups away from the Weed and Seed area. This finding can be attributed to the increased patrolling of the Oklahoma City Police Department taking place in the Weed and Seed area throughout the duration of this study's timeframe. The block groups associated with the Weed and Seed area exhibited a decrease in crime rates in 1999 (Figure 19). Most Weed and Seed block groups in 1999 had between 62.1 to 120.7 crimes per 1000 people, which was lower than the overall average of the Weed and Seed area (158.1 crimes per 1000). This map (Figure 19) indicated that the efforts of the Weed and Seed officers were working in reducing overall crime rates for the targeted area.

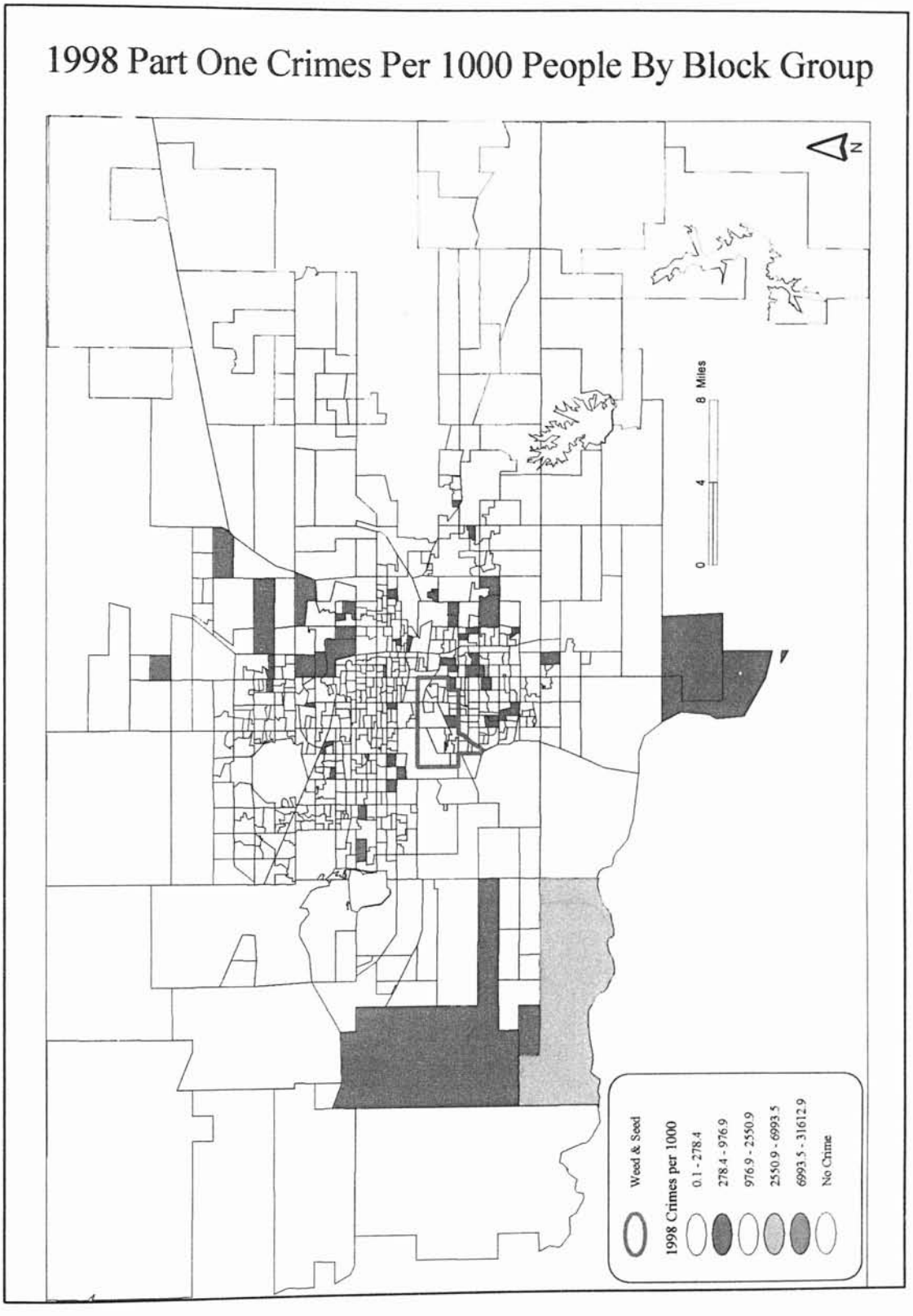

Figure 16. 1998 Part One crimes per 1000 people by block group.

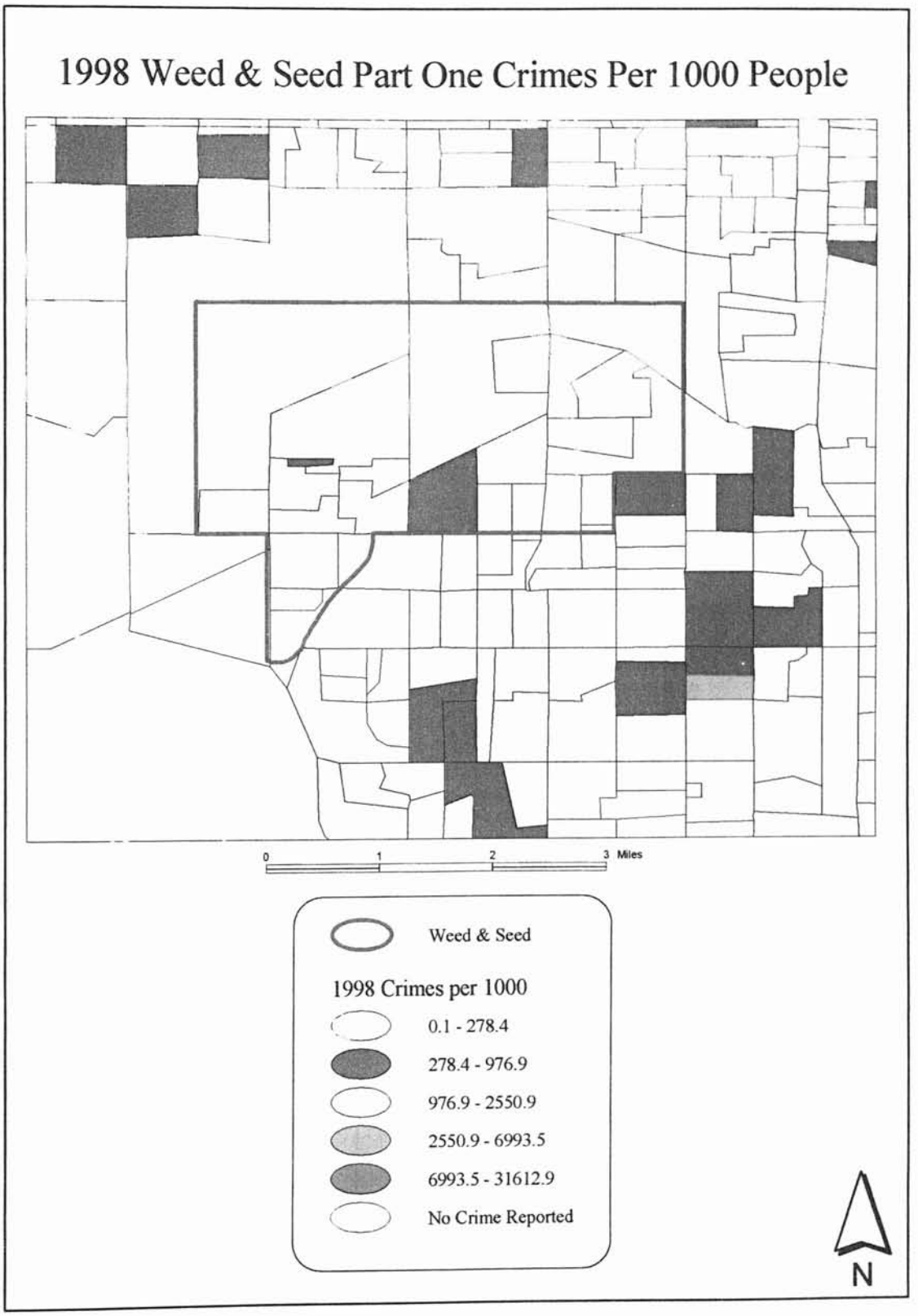

Figure 17. 1998 Weed & Seed Part One crimes per 1000 people.

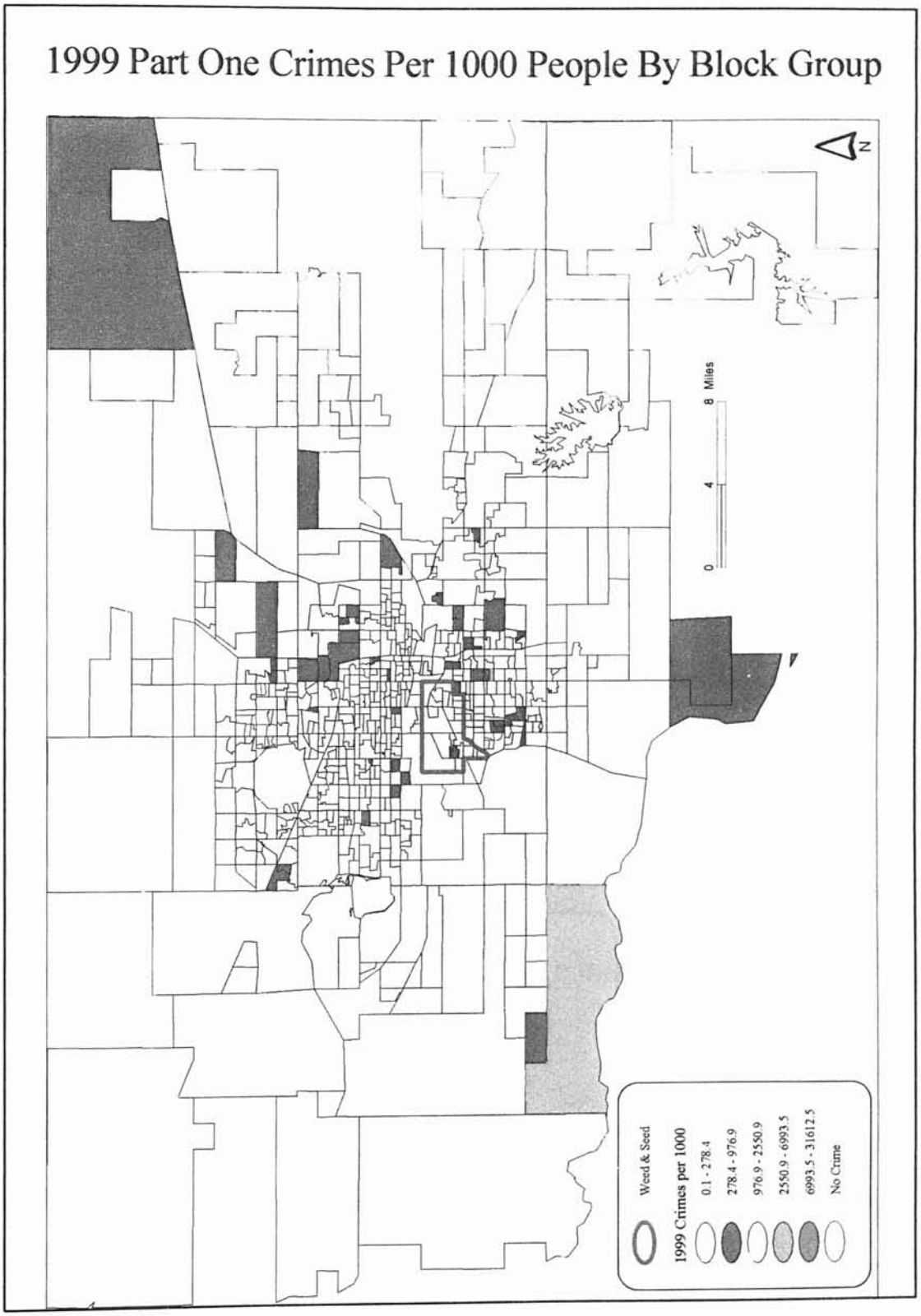

Figure 18. 1999 Part One crimes per 1000 people by block group.

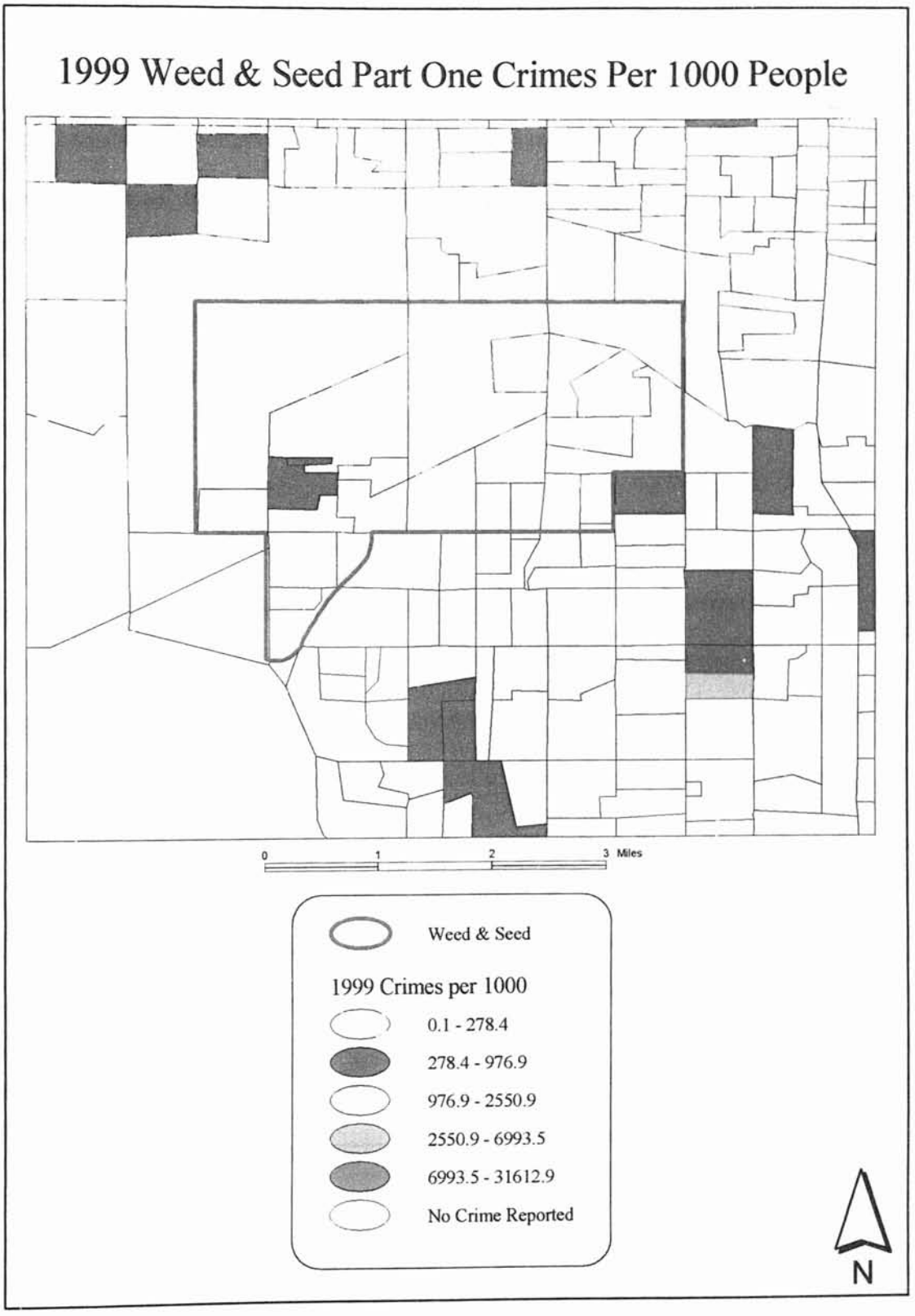

Figure 19. 1999 Weed & Seed Part One crimes per 1000 people.

However, in 2000, Oklahoma City experienced an increase of crimes per 1000 people to 91.6 (Table 2). In contrast to this, the Weed and Seed area decreased from 158.2 to 156.4 crimes per 1000 people as indicated in Table 2. Figure 20 indicated that the Oklahoma City block groups with high rates of Part One crimes were generally situated around the Weed and Seed area. Figure 21 indicated all of the Weed and Seed block groups, with the exception of four, were in the lower three levels of Part One crimes per 1000 people. The average for the Weed and Seed was 156.44 crimes per capita (Table 2) in the final year of this study.

This continuous reduction of per capita crime rates in the Weed and Seed area indicates the project could be a significant factor working in reducing crime in this target area. The fluctuation in levels for Oklahoma City can possibly be linked to this displacement of Part One crimes out of the Weed and Seed area to other less monitored areas. The percentages listed in Table 3 are the total percentage of change in Part One crime between each year and for the complete study timeframe, as well as the change for Oklahoma City as a whole.

Table 3

Total Percentage of Crime Reduction in the Weed & Seed, Two-Mile, & Outer Zones

	1996/1997	1997/1998	1998/1999	1999/2000	1996-2000
OKC	-16.943	2.263	-6.115	7.967	-13.904
W & S	-11.072	-39.584	-9.256	-1.1	-51.783
Two-Mile	-14.158	-18.299	-11.028	6.136	-33.772
Outer Zone	-19.336	21.059	-3.083	9.005	3.162

*Values given are percentage change

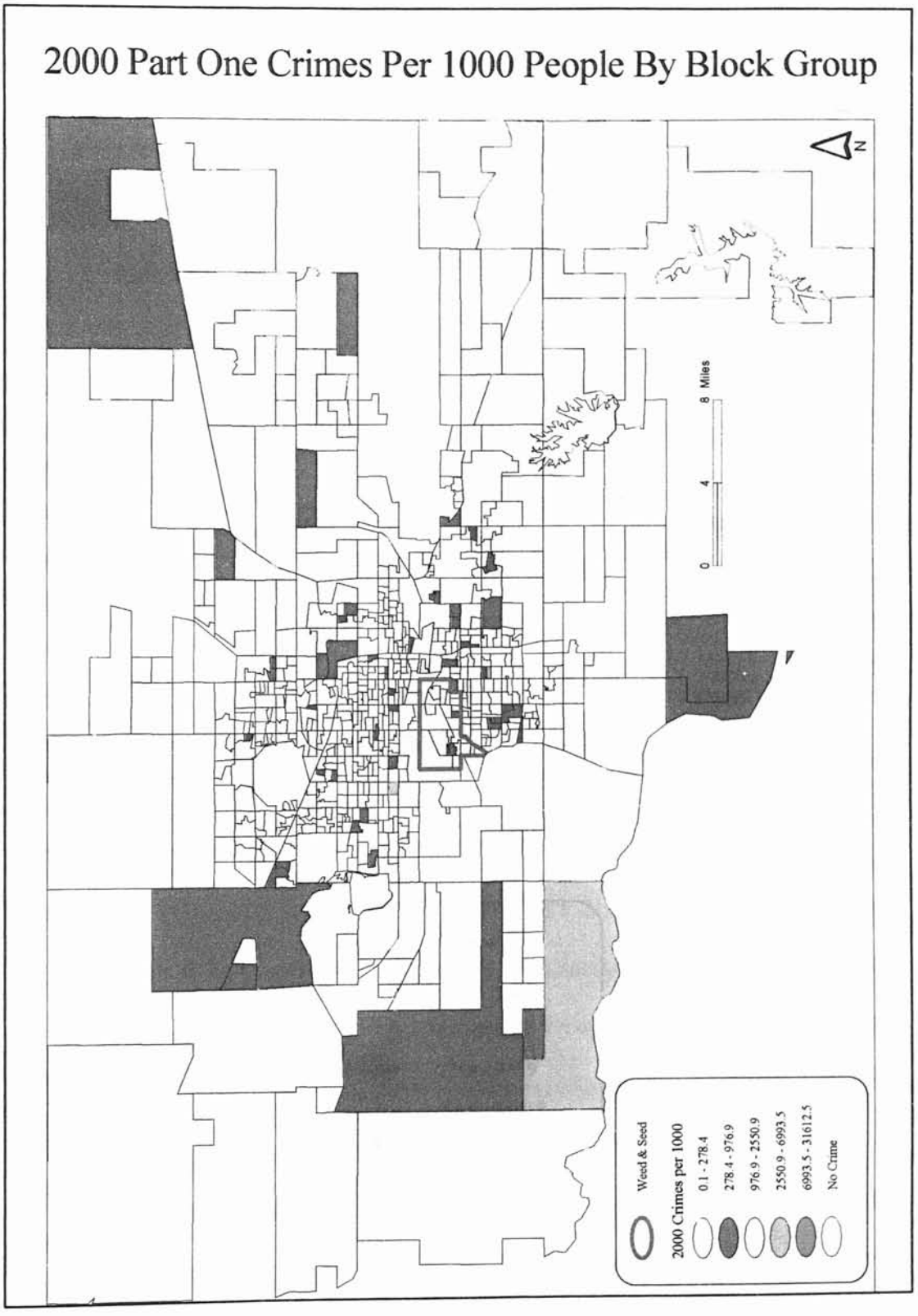

Figure 20. 2000 Part One crimes per 1000 people by block group.

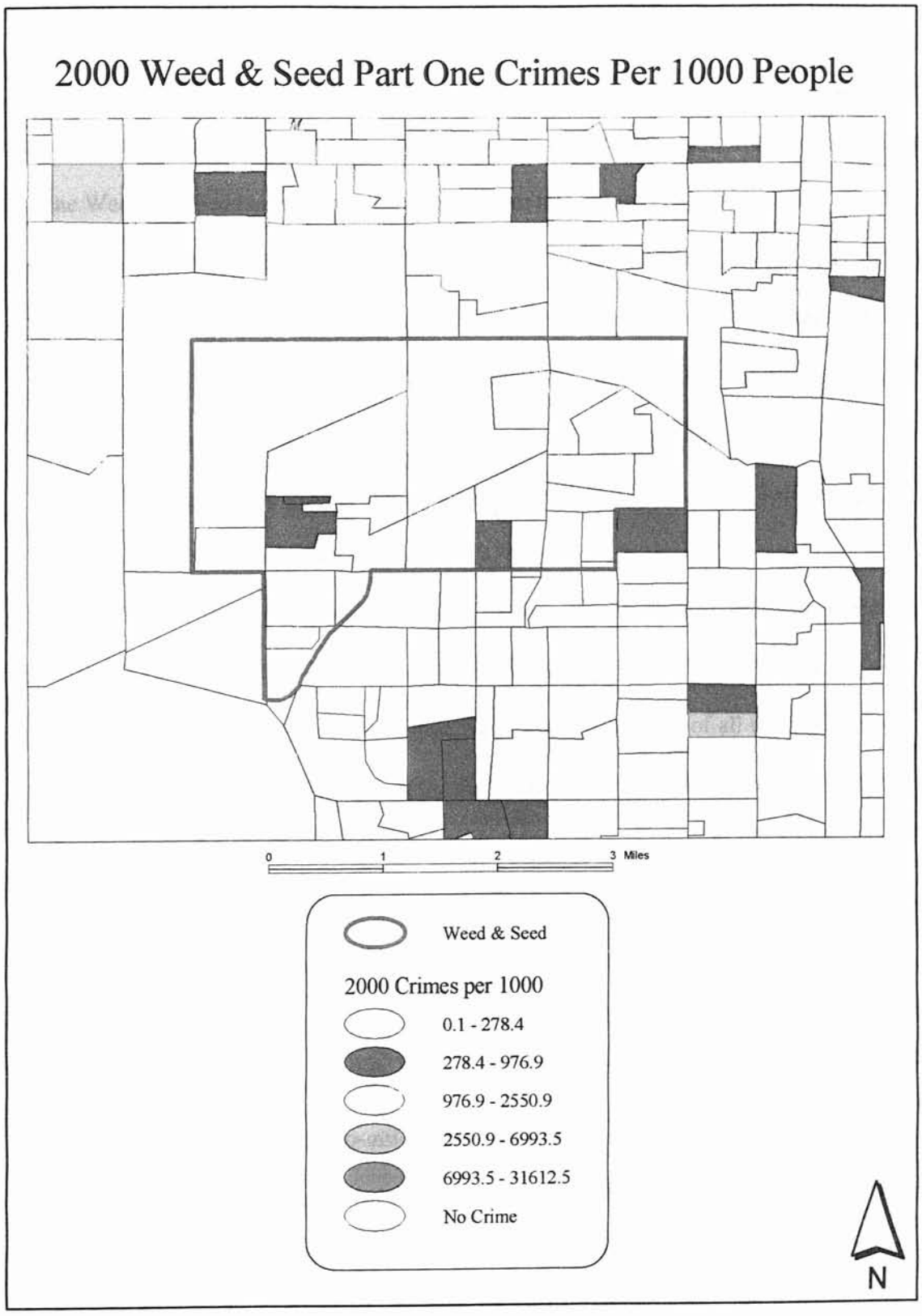

Figure 21. 2000 Weed & Seed Part One crimes per 1000 people.

The other objective of this question was to determine if the block groups associated with the Weed and Seed area had a significant difference in the total percentage of change in Part One crime rates versus the block groups in a two mile radius of the Weed and Seed area. The t-test was used to test the three hypotheses.

This hypothesis proposed that the Weed and Seed block groups would have a greater rate of change of Part One crime totals than the block groups associated with a two mile radius zone around the Weed and Seed area. Results of the analysis revealed a significant difference between the total percentage of change in Part One crime totals in the Weed and Seed block groups compared to the two mile radius zone block groups, t (57) = -2.131, p-value = .0187 (Table 4).

When comparing the total percentage of change in Part One Crime, the Weed and Seed area had a mean of –37.664 percent reduction compared to the two-mile zone's mean of –15.877 percent reduction. These figures are an average of all the block groups associated with their corresponding zone. An example would be that the –37.664 percent is the average reduction for each block group associated with the Weed and Seed area. This analysis was done to test if there was a difference in average reduction for the block groups of each of the three zones specified. The percentages listed in Figure 4 are the total percentages of change in Part One crime between each year and for the complete study timeframe. These values indicated that the Weed and Seed area reduced its crime rate at a greater rate than the two-mile zone. Specifically, the Weed and Seed block groups experienced a higher rate of decrease in Part One crimes over the five year study period compared to the rate of decrease in Part One crimes in the two mile radius block groups. This is evidenced by Table 3, which shows the Weed and Seed block groups

experienced a decrease of 51.78% in Part One crime compared to the two mile radius block groups, which experienced a 33.77% decrease in Part One crimes from 1996 to 2000 (Table 3). Therefore, because of these findings, this research hypothesis was supported.

Table 4

t-test for Weed & Seed vs. 2-Mile Zone

	Weed & Seed	Two-Mile Zone
Mean (rate of change)	-37.664	-15.877
Variance	2407.33	5303.04
SD	49.06	72.82
N (block groups)	32	181
df	58	
t-Stat	-2.131	
p-value	.019*	

* note: p-value<.05

It was also hypothesized that the Weed and Seed block groups had a greater reduction in total percentage of Part One crime compared to the outer zone block groups. Results of the analysis revealed a significant difference between reduction levels of Part One crime in the Weed and Seed block groups compared to the block groups in the outer zone, t (185) = -6.293, p-value = 1.09E-09 (Table 5). Since the p-value was less than .05, there was a significant difference between the Weed and Seed area and the Outer zone of block groups outside of two miles of the Weed and Seed. More specifically, the Weed and Seed block groups had a higher degree of overall reduction in Part One crime rates

than the outer zone as evidenced by Figure 22. The Weed and Seed's overall change was a total decrease of 51.78% as compared to the outer zone's change of a total increase of 3.16% (Table 3). Therefore, this research hypothesis was supported.

The final hypothesis for this research question proposed that there would be a significant difference in the reduction in the total percentage of Part One crimes between the outer zone block groups and the two-mile radius block groups.

Table 5

t-test for Weed & Seed vs. Outer Zone

	Weed & Seed	Outer Zone
Mean (rate of change)	-37.66	51.21
Variance	2407.33	61480.36
SD	49.06	247.95
N (block groups)	32	495
df	525	
T-Stat	-6.29	
P-value	1.09E-09*	

*note: P-value<.05

Results of the t-test revealed there was a difference between the total percentage of change in Part One crimes between the outer zone block groups and the two mile radius block groups, t (654) = 5.414, p-value = 4.32E-08 (Table 6). The outer zone block groups experienced an increase in crime in contrast to the two-mile radius block groups, which experienced a reduction during the study period. The outer zone yielded a 3.16 % increase in total percentage of Part One crime, while the two-mile radius yielded

a decrease of 33.77% in total Part One crime. Thus, this research hypothesis was supported.

These results indicated that the Weed and Seed area block groups had the greatest reduction in total percentage of change in Part One crimes than the two-mile zone of block groups surrounding the Weed and Seed area. The Weed and Seed experienced the greatest amount of overall crime reduction as compared to the outer zone of block groups. When comparing the Weed and Seed area to the two-mile radius zone surrounding the target area, the Weed and Seed area had the highest percentage of overall Part One crime change at 51.78%. The two-mile radius zones, however, yielded a 33.77% decrease in overall Part One crime. The difference between the two zone can be attributed to the dispersal of Part One crimes from the Weed and Seed area during the

Table 6

t-test for Outer Zone vs. Two-Mile Zone

	Outer Zone	Two-Mile Zone
Mean (rate of change)	51.21	-15.88
Variance	61480.36	5303.04
SD	247.95	72.82
N (block groups)	495	181
df	674	
T-Stat	5.41	
P-value	4.32E-08*	

*note: P-value<.05

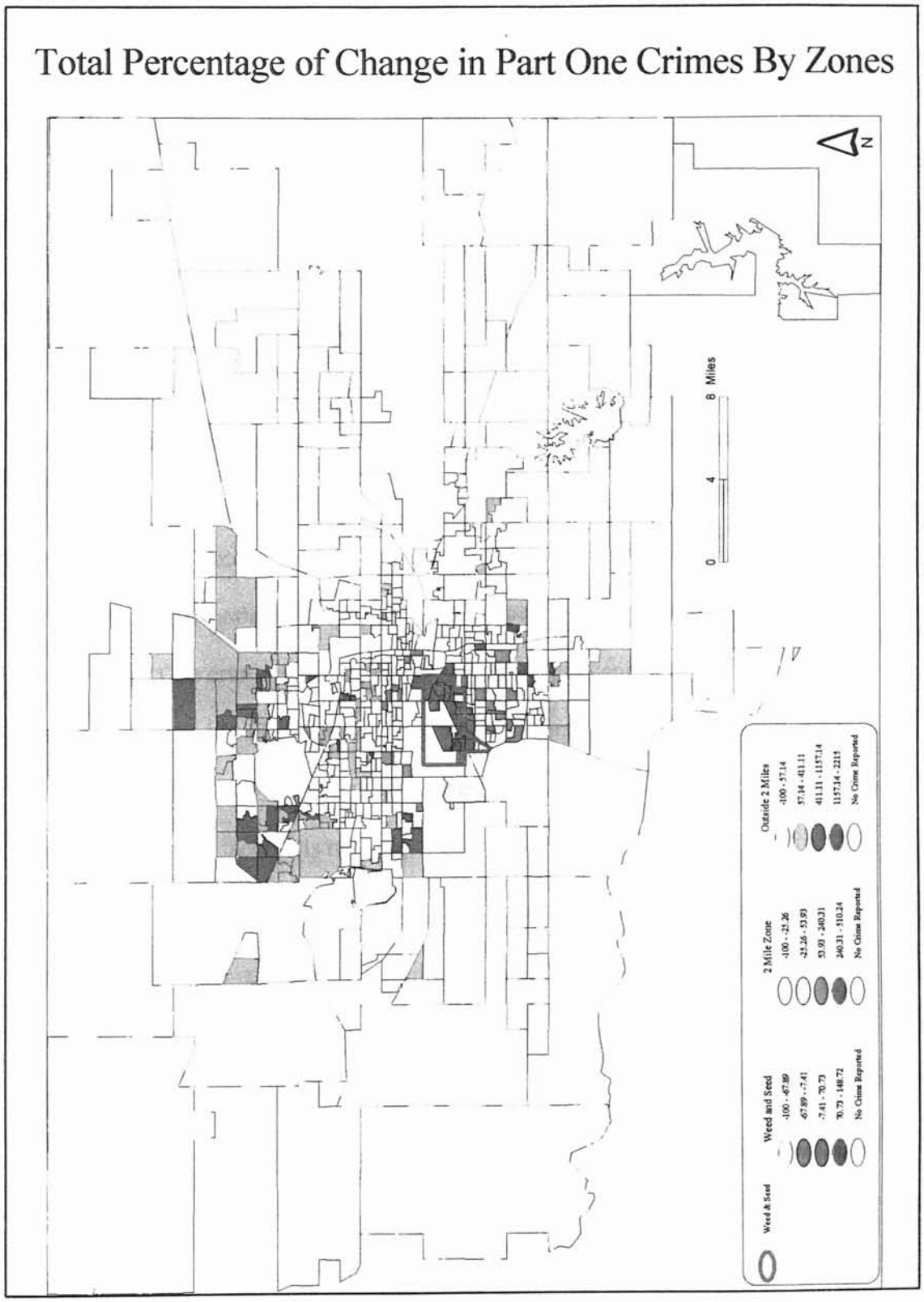

Figure 22. Total percentage of change in Part One crimes by zones.

five year study period to other areas throughout the Oklahoma City areas, specifically to the south of the Weed and Seed area. The percentage of Part One crimes present in this area increased by 3.16% over the five years contained in this study.

Results of Research Question II

For the purpose of this question, the objective was to determine which sociodemographic characteristics are most closely associated with Part One crimes in the Weed and Seed area. In order to answer this question, three hypotheses were proposed. Regression analyses were run on each sociodemographic characteristic by comparing these to the total percentage change in Part One crimes over the five-year study period.

The first hypothesis proposed that per capita income would have a significant effect on Part One crime rates. The predictor value, per capita income, F (674)= .00275,p-value = .17, (Table 7), was not found to contribute significantly to the total percentage of change in total Part One crimes. Therefore, this research hypothesis that relates to per capita income is not supported.

Table 7

Regression of Income vs. Total Percentage of Change in Crime

Regression Statistics	
r^2	.0028
N	675
Df	674
F	1.85
p-value	.17

p>.05

The second hypothesis associated with this research question proposed that age would be significantly related to the total percentage change in Part One crimes. It was hypothesized that the younger the average age of a block group, the greater the total percentage change in Part One crimes. The age variable was broken into four separate categories, 5-17, 18-34, 35-64, and 65 plus. Results of the regression analysis only found a significant relationship between the category of 18-34 and the total percentage change in Part One crimes in Oklahoma City. The predictor value, age, R^2 (674) = .0162, p-value = .027. (Table 8) accounted for 1.6% of the total variance. It is unsure what is accounting for the other 98.4% of the variance. Therefore, with these findings, this research hypothesis was not supported. These findings are not supported by Farrington (1986), who stated that youth from inner cities were often associated with crimes. Farrington only mentioned youth and not ages specifically.

Table 8

Regression of Age vs. Total Percentage of Change in Crimes

Regression Statistics	
R^2	.016
N	675
Df	674
F	2.75
p-value	.027

P-value>.05

The third hypothesis associated with this research question proposed that block groups with high numbers of people below poverty would experience higher levels of Part One crimes. A regression analysis was utilized to test this hypothesis. The below poverty figures were broken into four categories of age. These were 0-17, 18-34, 35-64, and 65 plus. This was done to simplify the analysis process by reducing the number of variables. Similar to the findings from the regression run against the age cohorts, it was found that there was a significant relationship in the 18-34 age range on total percentage of change in Part One crime rates. The predictor variable, total below poverty, t (674) = .0114, p-value = .10 was found to contribute 1.1% to the total variance. It is also unknown as to what other variable or variables are contributing the other 98.9% of the variance. Thus, this hypothesis was not supported. These findings are not supported by the Gibbs and Erickson study (1976), which argued that poverty is linked directly to

inner city crime. They stated that the higher poverty levels were, the more likely crimes would occur.

Table 9

Regression of Poverty vs. Total Percentage of Change in Crimes

Regression Statistics	
R^2	.011
N	675
Df	674
F	1.93
p-value	.10

P-value<.10 for Intercept.

It is not known if there are any sociodemographic characteristics that can significantly predict crime. From the variables tested in this study, none were found to conclusively predict crime change in the Oklahoma City area. Future regressions on different sociodemographic variables would need to be conducted to fully research future hypotheses of this form.

CHAPTER V

Conclusions

Several conclusions regarding the effects of the Oklahoma City Weed and Seed program on the reduction of Part One crimes can be drawn from the findings of the present study. First, the present study indicated that the Oklahoma City Weed and Seed might be responsible for an effective reduction in Part One crime. In addition, this reduction in Part One crime is significantly greater than the total percentage reduction of Part One crime for the remainder of the Oklahoma City metropolitan area. This may indicate that not only is the Weed and Seed program reducing Part One crime in the targeted area, but also is reducing the crime at a significantly greater rate than the general decline of crime in Oklahoma City.

Secondly, the present study did not find a significant relationship between various sociodemographic variables and the reduction of Part One crime. This suggests that using these as indicators of crime may not be the most accurate way to decide what areas to target in prevention programs such as Operation Weed and Seed. A more in depth study on other sociodemographic variables needs to be conducted, as this study's scope did not include all variables.

This study also documented the disbursement of Part One crimes from the targeted Weed and Seed area. It was found that Part One crime rates decreased for a two-

mile radius around the Weed and Seed area. The two-mile radius was an arbitrary distance chosen as a buffer zone. However, Part One crimes increased past this two-mile radius. It appears that the presence of the Weed and Seed program might decrease crime rates in the designated area and in the areas immediately surrounding the target area, but in doing so, the Weed and Seed may be pushing offenders into the extremities of the city where crime prevention techniques are at a minimum. This raises the question of whether or not the Weed and Seed is actually reducing crime. Or is the Weed and Seed simply relocating the crime? Thus, a reduction in Part One crime in one area may directly relate to an increase in Part One crime for another area. This study has concluded that there has been a noticeable reduction in Part One crime in the Weed and Seed area since the inception of the program in 1995. However, it cannot be said that the Weed and Seed program is solely responsible for this reduction in Part One crime.

The Oklahoma City Weed and Seed officials, in order to improve the current program already in place and to select new sites for intervention in other parts of the city, might benefit from the findings of this study. Officials associated with other Weed and Seed programs across the United States, in order to inform the residents regarding the placement and enforcement of Weed and Seed programs, might also use this information.

Other studies referenced here dealt with the reduction of total crimes such as Allender and DePew (1992) and Dunworth, et al (1999). These studies were concerned with how much the total number of crimes in an area either increased or decreased. This study, however, did not just look at the total number of crimes in an area, but studied the relationship between selected sociodemegraphic characteristics and the percentage of

change in crimes. Also, most studies discussed crimes in general. This research, however, looked specifically at Part One crime in the Oklahoma City area.

Future Research

The findings of the present study suggest several directions for future research. Unlike previous studies examining demographic variables in relation to crime rates, the present study failed to find a significant relationship between sociodemographic characteristics and a reduction in Part One crime rates. This suggests that other characteristics not included in this study may be more useful in predicting a reduction in Part One crime rates in Oklahoma City. Therefore, future research should attempt to document which characteristics are most useful in predicting Part One crime in Oklahoma City so that the Weed and Seed officials can target these characteristics in the program. This will increase the chances that crime rates will decrease in the target area. If certain characteristics are associated with Part One crimes, these characteristics should then be studied in relationship to other types of crime.

Secondly, the present study documented the effectiveness of the Oklahoma City Weed and Seed in reducing Part One crime over and beyond the general decline in Part One crime in the remainder of the Oklahoma City metropolitan area. However, this study did not evaluate the effectiveness of the program in reducing other types of crime such as drug offenses. Therefore, future research should be conducted in order to examine other types of crime in the Weed and Seed area. In addition, these studies should also document whether or not the program is effective in reducing these crimes compared to general law enforcement efforts.

Finally, this study also documented Part One crime in the outlying areas surrounding the Weed and Seed. Future research should be conducted on these outlying areas to determine if these areas are appropriate to implement a Weed and Seed program.

BIBLIOGRAPHY

Abeyie, Daniel E. Georges. *Crime; A Spatial Perspective*. New York: Columbia University Press. 1980.

Allender, David and Marshall DePew. Weed and Seed: working together works. *Law and Order*. April, 1992. New York.

Cohen, Lawrence E., James R. Kluegel, and Kenneth C. Land. Property Crime Rates in theUnited State: A Macrodynamic Analysis, 1947-1977; With Ex Ante Forecasts forThe Mid-1980's. *American Journal of Sociology*. 86:1, 90-118. 1980.

Department of Justice. *Operation Weed and Seed Implementation Manual*. Washington, DC: Executive Office for Weed and Seed. 1992.

Donert, Karl. Approaches to investigating the geography of crime. *Teaching Geography*. January 1998. Essex UK: Longman Group Ltd.

Dunworth, James, and Mills, Chris, Cordner, Timothy, and Greene, Thomas. *National Evaluation of Weed & Seed: Cross-Site Analysis*. Washington, DC. July, 1999.

Evans, David J. *Crime and Policing: Spatial Approaches*. Aldershot UK: Averbury. Ashgate Publishing Limited.

Farley, John E. *Ecological Correlates of Central City Crime*. Paper presented at annual Meeting of the Midwest Sociological Society, Milwaukee, April, 1980.

Farley, John E., and Mark Hansel. The Ecological Context of Urban Crime: A Further Explanation. *Urban Affairs Quarterly*. 17: 37-54. 1980.

Farrington. David P. Age and Crime. In M. Tonry and N. Morris, eds. *Crime and* Justice: An Annual Review of Research. Chicago: U. of Chicago P., 7, 189-250. 1986.

Gibbs, Jack P., and Maynard L. Erickson. Crime Rates of American Cities in an Ecological Context. *American Journal of Sociology* 82: 605-20. 1976.

Harries, Keith D. *The Geography of Crime and Justice*. New York: McGraw-Hill Book Company. 1974.

Herbert, David. *The Geography of Urban Crime*. London: Longman Group Ltd. 1982.

Land, Kenneth C., and Marcus Felson. A General Framework for Building Dynamic Macro Social Indicator Models: Including an Analysis of Changes in Crime Rates and Police Expenditures. *American Journal of Sociology*. 82:3, 565-604. 1976.

Oklahoma City Office of Weed and Seed. *Weed and Seed Grant: Year Four*. Oklahoma City. 2000.

Oklahoma Criminal Justice Resource Center. *Violence in Oklahoma: A Case for Prevention 2000. Oklahoma City:* OCJRC. 2000

Oklahoma Criminal Justice Resource Center. *OCJRC Annual Report: 1998*. Oklahoma City: OCJRC. 1998.

Oklahoma Criminal Justice Resource Center. *Weed and Seed Direction Survey Report*. Oklahoma City: OCJRC. 1999.

Oklahoma Criminal Justice Resource Center. *Survey and Evaluation of "Weed And Seed" Program in Oklahoma City*. Oklahoma City: OCJRC. 1998.

Oklahoma Criminal Justice Resource Center. *Linking Residents to Objectives In the Oklahoma City "Weed and Seed" Program*. Oklahoma City: OCJRC. 1998.

Oklahoma State Bureau of Investigation. *Crime in Oklahoma: 1999 Uniform Crime Report*. Oklahoma City: OSBI. 1999.

Oklahoma State Bureau of Investigation. *Crime in Oklahoma: 1998 Uniform Crime Report*. Oklahoma City: OSBI. 1998.

Oklahoma State Bureau of Investigation. *Crime in Oklahoma: 1997 Uniform Crime Report*. Oklahoma City: OSBI. 1997.

Oklahoma State Bureau of Investigation. *Crime in Oklahoma: 1996 Uniform Crime Report*. Oklahoma City: OSBI. 1996.

Pyle, Gerald, F. et al. *The Spatial Dynamics of Crime*. Chicago: University of Chicago Department of Geography. 1974.

Skogan, Wesley G. The Changing Distribution of Big-City Crime: A Multi-City Time Series Analysis. *Urban Affairs Quarterly* 13:33-48. 1977.

Stafford, Mark C., and Jack Gibbs. Crime Rates in an Ecological Context: Extension of a Proposition. *Social Science Quarterly*. 61:653-65. 1980.

United States Federal Bureau of Investigation. *Crime – Crime in the U.S.* Washington DC. 1998.

Wiles, Paul. A Comparative Evaluation of Approaches to Urban Crime Pattern Analysis. *Urban Studies.* Vol. 37, No. 4, 711-729, 2000. London, UK.

Woolard, Russell. Weeding and Seeding Harvests Benefits: Weeding Out Criminals and Sowing the Seeds for Safety. *Law and Order.* New York. April, 1997.

www.ojp.usdoj.gov/eows/StepsOR.htm. Steps to Official Recognition. United States Department of Justice. 1999.

www.ojp.usdoj.gov/eows/promogui.htm. Why Promote Your Weed and Seed Strategy. United States Department of Justice. 1999.

VITA

Gregory R. Hakman

Candidate for the Degree of

Master of Science

Thesis: ANALYSIS AND COMPARISON OF PART ONE CRIMES IN THE OKLAHOMA CITY AND WEED & SEED AREAS. 1996-2000

Major Field: Geography

Biographical:

Personal Data: Born in Honolulu, Hawaii, On August 14, 1973, the son of Randall J. and Donetta J. Hakman.

Education: Graduated from Enid High School, Enid, Oklahoma in May 1992; Bachelor of Science degree in Geography from Oklahoma State University, Stillwater, Oklahoma in May 1999. Completed the requirements for the Master of Science degree with a major in Geography at Oklahoma State University in May 2002.

Experience: Employed at Rice Associates in Richmond, Virginia as the GIS Manager, June 2001 to present; employed by the State of Oklahoma at the Oklahoma Criminal Justice Resource Center as a Research Assistant and Crime Mapping Specialist from August 2000 to June 2001.

Professional Memberships: Gamma Theta Upsilon, Association of American Geographers